


To be returned to :

UNIVERSITY OF LONDON LIBRARY DEPOSITORY,
SPRING RISE,
EGHAM,
SURREY.

From
THE LONDON SCHOOL OF HYGIENE
AND TROPICAL MEDICINE,
KEPPEL STREET,
LONDON, W.C.1.

**LONDON SCHOOL OF HYGIENE
AND TROPICAL MEDICINE.**

(DEPT OF MEDICAL STATISTICS)



Digitized by the Internet Archive
in 2021 with funding from
Wellcome Library

WELLCOME INSTITUTE LIBRARY	
Coll.	welMOrnec
Call	
No.	

JOURNAL

OF THE

STATISTICAL SOCIETY

OF

LONDON.

(FOUNDED 1834.)

VOL. XXVII.—YEAR 1864.

LONDON:

EDWARD STANFORD, 6, CHARING CROSS, S.W.

1864.

68914

NOTICE.

THE Council of the Statistical Society of London wish it to be understood, that, while they consider it their duty to adopt every means within their power to test the facts inserted in this Journal, they do not hold themselves responsible for their accuracy, which must rest upon the authority of the several Contributors.

ERRATUM.

Page 321, line 26, *for* "In '61 5,505,765," *read* In '61 4,505,265.

STATISTICAL SOCIETY.

COUNCIL AND OFFICERS.—1864-65.

President.

COLONEL W. H. SYKES, M.P., F.R.S.

Vice-Presidents.

CHARLES BABBAGE, M.A., F.R.S.

JAMES HEYWOOD, M.A., F.R.S.

SIR JOHN PETER BOILEAU, BART., F.R.S.

WILLIAM NEWMARCH, F.R.S.

Trustees.

CHARLES BABBAGE, M.A., F.R.S.

SIR CHARLES LEMON, BART., LL.D., F.R.S.

COLONEL W. H. SYKES, M.P., F.R.S.

Treasurer.

WILLIAM FARR, M.D., D.C.L., F.R.S.

Council.

COLONEL GEORGE BALFOUR.

JAMES BIRD, M.D.

SAMUEL BROWN.

WILLIAM CAMPS, M.D.

JAMES CAIRD, M.P.

EDWIN CHADWICK, C.B.

LEONARD HENRY COURTNEY.

RIGHT HON. EARL FORTESCUE.

JAMES THOMAS HAMMICK.

FREDERICK HENDRIKS.

WILLIAM BARWICK HODGE, V.P.I.A.

CHARLES JELlicoe.

LEONE LEVI, F.S.A.

RIGHT HON. HOLT MACKENZIE, F.R.G.S.

MATTHEW HENRY MARSH, M.P.

RIGHT HON. LORD MONTEAGLE, F.R.S.

SIR RODERICK IMPEY MURCHISON, K.C.B.,
G.C.St.S., D.C.L., LL.D.

W. TITE, M.P.

MAJOR-GENERAL SIR A. M. TULLOCH,
K.C.B.

RICHARD VALPY.

CORNELIUS WALFORD.

REV. WILLIAM WHEWELL, D.D., F.R.S.

Honorary Secretaries.

WILLIAM AUGUSTUS GUY, M.B.

WILLIAM GOLDEN LUMLEY, LL.M.

FREDERICK PURDY.

Editor of Society's Journal.

FREDERICK PURDY.

Assistant Secretary.

FREDERICK GOVER.

CONTENTS.

VOL. XXVII.—YEAR 1864.

March, 1864.

	PAGE
Comparison of the Organisation and Cost in detail of the English and French Armies. By COLONEL W. H. SYKES, M.P., F.R.S., President of the Statistical Society.....	1—69
On a Continuous Price of Wheat for 105 Years, from 1380 to 1484. By the REV. J. E. T. ROGERS, M.A., Professor of Political Economy in the University of Oxford ; and Tooke Professor of Economic Science and Statistics at King's College, London	70—81
On the Commercial Progress and Resources of Central British America ; the Lake Winnipeg and Saskatchewan Districts. By HENRY YOULE HIND, M.A., F.R.G.S., Trinity College, Toronto	82—105
On the Opening and Extension of Durham University Academical Endowments. By JAMES HEYWOOD, M.A., F.R.S.	106—111
Reports of the Official Delegates from England at the Meeting of the International Statistical Congress, Berlin, September, 1863. (<i>Second notice</i>)	112—117
Miscellanea :—The Annual Accumulations of Capital in the United Kingdom.—Traffic Statistics of Waterloo Bridge, London.—Comparative Statistics of European Armies.—Statistics of French Commerce.—The Import and Export Trade of the United Kingdom in 1861-62-63	118—136
Quarterly Returns, October, November, December, 1863	137—164

June, 1864.

PAGE

Report of the Council, presented at the Thirtieth Anniversary Meeting of the Statistical Society, held 15th March, 1864; with the Proceedings of that Meeting	165—169
On Certain Results and Defects of the Reports of the Registrar-General. By WILLIAM LUCAS SARGANT, Author of "Social Innovators and their Schemes," "Science of Social Opulence," &c.	170—221
A Few Statistics relating to Shipping Casualties. By HENRY JEULA, Member of Lloyd's, F.R.G.S., F.S.S.	222—233
On Shipwrecks in the Royal Navy. By WILLIAM BARWICK HODGE, one of the Vice-Presidents of the Statistical Society	234—244
Resources of Brazil. Presented by JAMES HEYWOOD, M.A., F.R.S.	245—257
Price of Edibles and Potables in A.D. 1506. By COLONEL W. H. SYKES, M.P., F.R.S., President of the Statistical Society .	258—260
Miscellanea :—Statistics of Educational Results.—Census of Religious Sects in Victoria.—Why India is in the State it is.—Cost of the English Census.—Bank Rate of Discount from 1844 to 1864.—Agricultural Statistics	261—276
Quarterly Returns, January, February, March, 1864	277—301

September, 1864.

The Statistics of the Roman Catholics in England and Wales. By WILLIAM GOLDEN LUMLEY, Esq., LL.M., of the Middle Temple, Barrister - at - Law, and one of the Honorary Secretaries of the Statistical Society	303—323
On the Mortality of Eurasians.—By P. M. TAIT, Esq., F.S.S., F.R.G.S. (late of Calcutta), Director of Indian Business of the Albert Life Assurance Company	324—356
Statistics of the City of Aberdeen. Compiled by JAMES VALENTINE, and communicated by COLONEL W. H. SYKES, M.P., F.R.S., President of the Statistical Society.....	357—368

Statistics of Crime in Russia. By T. MICHELL, F.R.G.S., Fellow of the Imperial Geographical Society of Russia, Fellow of the Agricultural and Entymological Societies of St. Petersburg, Honorary Member of the Statistical Society of London	369—377
On the Paris Street Improvements and their Cost. By W. TITE, M.P., F.R.S., &c.	378—387
On the Decrease of the Agricultural Population of England and Wales, 1851-61. By FREDERICK PURDY, Principal of the Statistical Department, Poor Law Board, and one of the Honorary Secretaries of the Statistical Society.....	388—400
Statistics of Metropolitan and Provincial General Hospitals for 1862.....	401—409
Miscellanea :—The Diffusion of Cheap Literature in England.— The Criminal Statistics of Aberdeen for Twenty Years.— Statistics of Sunday Schools in Manchester and Salford.— The Russian Budget for 1864.—Disease in the Army	410—434
Quarterly Returns, April, May, June, 1864	435—458

December, 1864.

Opening Address of the President of Section F (Economic Science and Statistics), of the British Association for the Advancement of Science, at the Thirty-Fourth Meeting, at Bath, in September, 1864. By WILLIAM FARR, Esq., M.D., D.C.L., F.R.S.	459—478
On the Comparative Mortality of London and Paris. By WILLIAM TITE, Esq., M.P., F.R.S.	479—491
Poor Law Administration, its Chief Principles and their Results in England and Ireland as compared with Scotland. By EDWIN CHADWICK, C.B.	492—504
The Statistics of Crime in Australia. By WILLIAM WESTGARTH, Esq., Author of "Victoria and the Australian Gold Mines, 1857 ;" "Colony of Victoria, 1864," &c., &c., &c.	505—519
Statistics of Live Stock in the United Kingdom, 1853-63. By ROBERT HERBERT	520—525

	PAGE
On the "Cider-Truck" System in some parts of the West of England. By EDWARD SPENDER	526—532
The Sanitary Statistics of Salisbury. The Years 1841-49 and 1856-64 Compared. By A. B. MIDDLETON, Esq., M.R.C.S.	533—557
On the Number, Occupation, and Status of Foreigners in England. By LEONE LEVI, Esq., F.S.A., F.S.S., of Lincoln's Inn, Barrister-at-Law, Doctor of Economic Science of the University of Tübingen, Professor of the Principles and Practice of Commerce in King's College, London.....	558—565
On the Rates of Mortality and Marriage amongst Europeans in India. By SAMUEL BROWN, F.S.S.	566—579
Thirty-Fourth Meeting of the British Association for the Advancement of Science, held at Bath, 15th—20th September, 1864.—Section (F), Economic Science and Statistics	580, 581
Proceedings of the Statistical Society, Session 1863-64	582, 583
Miscellanea:—Comparative Education in 1862.—Post Office Savings Banks.—Strikes in the Manufacturing Districts.—Cost of the Cotton Famine in Relief to the Poor	584—602
Quarterly Returns, July, August, September, 1864	603—631
INDEX to vol. xxvii (1864)	633—648

JOURNAL OF THE STATISTICAL SOCIETY,

MARCH, 1864.

COMPARISON of the ORGANISATION and COST in detail of the
ENGLISH and FRENCH ARMIES. By COLONEL W. H. SYKES,
M.P., F.R.S., *President of the Statistical Society.*

[Read before Section (F) of the British Association, at Newcastle, 1863.]

CONTENTS:

	PAGE		PAGE
I.—Introductory.....	1	VIII.—Dépenses.—Section 1, Chapitre 1	
II.—The Administration, the Pay and Allowances of both Armies compared.....	7	—Administration Centrale (Personnel)	38
III.—Cost of Barracks, of Military Justice, and of the Manufacture of Instruments and Munitions of War.....	14	IX.—Suite de la Section 3, Chapitre 6, Partie 2—Vivres, Chauffage et Fourrages.....	39
IV.—Cost of the Military Education of the English and French Armies.....	19	X.—Suite de la Section 3, Chapitre 6, Partie 2—Vivres, Chauffage et Fourrages.....	41
V.—Miscellaneous Charges of the English and French Armies.....	21	Récapitulation de la Partie 2	42
		XI.—Suite de la Section 3, Chapitre 6, Partie 3—Vivres, Chauffage et Fourrages.....	43
APPENDIX.		XII.—Suite de la Section 3, Chapitre 7—Habillement et Campement.....	46
I.—Effectif. Tableau Général de l'Effectif en Hommes et en Chevaux, servant de base à l'Etablissement du Budget de l'Exercice 1864	26	XIII.—Suite de la Section 3, Chapitre 8—Lits Militaires.....	50
II.—Section 2, Chapitre 4—Etats-Majors	30	XIV.—Section 4, Chapitre 15, Article 2—Armes Portatives. Section 1—Armes Neuves.....	51
III.—Décomposition de l'Effectif à entretenir dans les Divisions Territoriales de l'Intérieur.....	31	XV.—Suite de la Section 4—Poudres et Salpêtres (Matériel)	53
IV.—Comparison of the Five Sections.—Ministère de la Guerre. Budget Général des Dépenses Ordinaires de l'Exercice 1864.....	33	XVI.—Suite de la Section 3, Chapitre 12—Remonte Générale	54
Comparaison par Chapitre des Crédits Demandés pour 1864 avec les Crédits Accordés pour 1863.....	33	XVII.—Article 3—Fonderies	55
Comparaison des Crédits Demandés pour 1864 avec les Crédits Accordés pour 1863	34	XVIIA.—Suite de la Section 3, Chapitre 12—Harnachement	55
V.—Table Détaillée des Matières.....	35	XVIII.—Comparative Table of the Number of Officers and Men in the English and French Armies, and the respective Cost of each	56
VI.—Récapitulation Générale.....	36	XIX.—Comparative Table of French and English Military Pay of Officers and Privates	62
VII.—Récapitulation de la Part 1, Section 3, Chapitre 6	37	XX.—Statement of the Method of Applying Grants of Public Money in France to their appropriate objects, and of the System of Auditing the Public Accounts... ..	64
VIIA.—Section 3, Chapitre 3, Part 1—Solde des Troupes.....	37		

I.—Introductory.

A FRIEND having placed at my disposal the French Official Army Budget for 1864, it seemed to me advantageous to place before the English taxpayers in juxtaposition the total charge for the English and French armies, effectives and non-effectives, the average cost per man of the total charge of each army, and then to follow the comparison into the details of the average cost per man in the

several branches of outlay for pay, clothing, provisions, barracks, manufacturing establishments, &c., as far as the classification and arrangement of charges in the respective armies would permit. In the latter object, however, in some instances the comparison is neither rigid nor satisfactory. I was quite prepared to find that the French army was maintained at a considerably less cost per man than the English army, owing to the smaller pay to officers and men, cheaper provisions, cheaper labour, and the habitual employment of the soldiers in military works,—but I was not prepared for the startling result of the primary comparison, which shows that the French Government maintain two soldiers for a trifle more than it costs the English Government to maintain one soldier! In addition to the causes above stated, I am disposed to attribute the less costly character of the French army to what the French call the “*administration personal*” (corresponding to our establishments), comprising a much smaller number (proportionably) of persons employed in the several departments of the army than with us; in other words, the same amount of work is done (indeed much more if we examine the details) by a smaller number of officials than are employed departmentally in the branches of the British army; and other grounds for increased discrepancies exist in the contrasts of the cost of the manufacturing and barrack departments. In comparing the French average charges with English, for the sake of convenience, I have valued the pound sterling at 25 francs, and the franc at 10*d.* This is rather unfavourable to the French, as it makes the divisors fractionally less than they ought to be.

European armies are all composed of the same arms,—infantry, cavalry, artillery, engineers, and military train. The French incorporate in their army a great body of gendarmerie, cavalry and infantry, which corresponds to a certain extent with the Irish constabulary, the cost of which is excluded from the cost of the English army, although quite as efficient as the gendarmerie of France. The French army has at its head a great department called “*The Etats-Major*,” or staff corps, comprising 10 marshals of France, 90 generals of division, and 160 generals of brigade, and other superior officers—staff officers of the artillery, engineers, garrisons of towns, &c., in activity, besides 78 generals of division in reserve, 2 in administrative departments, and 180 generals of brigade. Officers only enter this distinguished body by successfully passing prescribed grades of education in the military schools. The Emperor has a personal guard, called the *Escadron des Cent-Gardes à Cheval*, and the imperial guard is in fact a corps of the army of all arms,—infantry, cavalry, gendarmerie, artillery, engineers, and military train. To avoid repetition in details, which would lead me to great lengths, I refer to Table I for

the strength of the French army in detail, to Table II for the *etats-major*, imperial guard, and *gendarmerie*, and for the constitution of the army to Table III. The troops permanently stationed in Algiers are separately stated in all the tables, but included in the totals of the respective arms.

Effective Strength of the English and French Armies.

	English Army.				French Army.		
	Officers.	Sub-Officers and Men.	Total.		Officers.	Sub-Officers and Men.	Total.
General staff (exclusive of those on fixed establishment of regiments)	104	—	104	Etats-major	2,744	1,911	4,655
Royal guards, horse and foot....	358	7,264	7,622	Escadron des cent-gardes	13	208	221
Infantry of the line	3,856	77,444	81,300	Garde imperiale	1,405	28,518	29,923
Cavalry	578	10,248	10,826	Gendarmerie	663	19,672	20,335
Artillery	887	19,825	20,712	Infantry of the line	10,015	214,195	224,210
Engineers	401	4,505	4,906	Cavalry	3,621	49,554	53,175
Military train	106	1,734	1,840	Artillery	1,545	33,343	34,888
Depôts of regiments in India in the United Kingdom.....	458	8,891	9,349	Engineers	260	6,708	6,968
West India regiments and colonial corps	451	8,613	9,064	Military train	300	4,622	4,922
Army hospital corps	1	939	940	Included in the infantry	—	—	—
Commissariat staff	1	558	559	Colonial corps, European and Native	651	10,887	11,538
Establishments, depôts, recruiting, instruction, &c.	261	436	697	Administrative services	1,993	6,744	8,737
Educational military colleges, schools.....	26	297	323	Included in the respective arms }	—	—	—
Total effectives	7,488	140,754	148,242	Veterans of the army	19	629	648
				Total effectives	23,229	376,991	400,220

The English army has its general staff, but not constituted as the French *Etats-Major*, as there are only 104 officers in it, independent of those on the strength of regiments. It has a personal guard for the Sovereign, called the household troops, consisting of three regiments of cavalry and three regiments of infantry, called the life, horse, and foot guards. The remaining part of the troops consists of the same arms as in the French army, but it has in addi-

tion the disembodied militia, yeomanry, volunteers, and enrolled pensioners and army reserve force, under the designation of auxiliary forces, for all which votes are taken in the estimates.

For details of the effective strength of the English army, I must refer to the English estimates for the year 1863-64, and to the French budget, Table I, for the year 1864. It will suffice to give the number of officers and men of the different arms of the two armies.

The English army has 14,511 horses, without distinguishing officers' horses from those of the men, and the French army 11,257 officers' horses, 74,448 for men; total, 85,705.

The English have 3,474 officers and 69,202 men (total, 72,676) of all arms in India, which, as they are paid out of the revenues of India, are not comprised in the English estimates.

It would seem from the above tabular comparison that the proportion or ratio that the artillery bears to the total troops is very different in the two armies. The ratio of officers to men is much the same, 4·28 and 4·42 per cent; but the ratio of the whole artillery officers and men to the total number of troops in both armies is widely different; the artillery of the English army, horse and foot, is within a fraction of 14 per cent. of the whole army, while the ratio of the French artillery, excepting the artillery and other arms of the imperial guard, is only 9·4 per cent.; the English, therefore, have a much larger proportion of artillery than the French. With respect to the British engineers, the officers to the men are 8·2 per cent., and the whole body of engineers to the whole army, 3·3 per cent. The French engineer officers are 3·9 per cent., and the whole engineers to the whole army, minus imperial guard, are 1·9 per cent.; and yet the French engineer establishment has the construction, repair, and charge of all fortifications, military buildings, barracks, &c. The English cavalry officers of the line are 5·3 per cent. of the cavalry, and the line cavalry to the whole army, minus the household troops, is 7·3 per cent. The French cavalry of the line have a fraction less than 7 per cent. of officers; and the French cavalry, therefore, is better officered than the British, and the whole line cavalry to the whole army, minus the imperial guard, is 14·3 per cent., which is more than double the proportions in the English army. The total number of officers of every grade to the total strength is 5·05 per cent. in the English army, and 5·8 per cent. in the French army; consequently there is nearly one officer more to every 100 men in the French army than in the English.* But the great feature is in the numerous cavalry. On

* The composition of a company of French infantry is 3 officers, 6 sub-officers, 8 corporals, 2 drummers, and 66 men; total, 85. The total of a regiment of the guard of 4 battalions, 24 companies, and staff is 2,200 men.

The composition of a squadron of cavalry of the guard is 8 officers and

the other side, the English army has artillery in the proportion of 14 to 9, and engineers rather more than 3 to 2 as compared with the French army. The French army, in addition to the 400,220 men, has 5,622 youths, designated *enfants de troupe*, attached in varying proportions to each arm and regiment.

Having compared the organisation and strength of the two armies, I now proceed to compare the expense in detail of the different arms embraced under the various heads of administration, staff corps, pay, provisions, clothing, supply of arms, ammunition, &c. In some instances, however, the comparisons cannot be exact from the different groupings of charges; but a sufficient approximation to the truth is obtainable, and with respect to the absolute cost per man in the effective strength of both armies there can be no question. The English estimates are arranged under six heads:—1. Regular forces; 2. Auxiliary forces; 3. Stores; 4. Works and buildings; 5. Other services; these comprise the charges for the effective service; the 6th head is non-effective service. Each of these headings is divided into an irregular number of votes; the 1st, regular forces, has seven votes; the 2nd, auxiliary forces, four votes; the 3rd, stores, two votes; the 4th, works and buildings, one vote; the 5th, other services, four votes; total, eighteen votes for the effective

10 horses, 10 sub-officers and 10 horses, 21 brigadiers and farriers and 21 horses, 4 trumpeters and 4 horses, and 111 troopers with only 75 horses; total officers and men, 154, and 120 horses. The regiment consists of 6 squadrons, embracing 1,047 men and 801 horses. A regiment of the line of 3 battalions and 1 *depôt* has 1,929 officers and men, inclusive of staff; each company (24) has 19 officers and sub-officers and 55 men. The *chasseurs à pied*, 81 officers and men per company. A regiment of cavalry of the line has 6 squadrons, each with 7 officers and 28 sub-officers, and 95 troopers; total, 882 officers and men, including the staff, and 600 horses. A regiment of engineers consists of 2,203 officers and men. A regiment of infantry of the guard consists of 2,200 men.

The regiment of English life guards has 33 officers and 406 non-commissioned officers and troopers, the latter at 1s. 11½*d.* per diem. A regiment of cavalry of the line has the same number of officers, with a paymaster, 603 non-commissioned officers and troopers; pay of latter, 1s. 3*d.* per diem. A garrison brigade of artillery, 55 officers and 935 non-commissioned officers and bombardiers; pay of the latter, 2s. per diem. The field brigades vary from 1,436 officers and men in the coast to 1,931 officers and men in the 4th brigade. A regiment of cavalry, in the field, 546. A brigade of horse artillery, 784 of all ranks. The royal engineers have 399 officers, 40 companies, and 4,118 non-commissioned officers, sappers, and miners, and 2 mounted troops numbering 389. The regiment of grenadier guards has 109 officers, the colonel receiving 2,200*l.* per annum, 1 solicitor, and 2,586 non-commissioned officers and privates; the pay of the latter, 1s. 1*d.* per diem. The other regiments of guards have respectively 73 and 74 officers, and each a solicitor, and 1,724 and 1,736 non-commissioned officers and privates; the pay of the latter, 1s. 1*d.* per diem; the 2 colonels receiving 2,000*l.* a regiment per annum each. A regiment of infantry of the line, in garrison, has 45 officers, including 2 medical men, and 883 non-commissioned officers and privates; the pay of the privates, 1s. per diem. The colonel receives 1,000*l.* per annum. In the field it has 1,084 officers and men,

service. The 6th, non-effective service, has nine votes ; total votes in the estimate for 1863-64 are *twenty-seven*.

The French War Minister divides his budget into five sections* and twenty-four chapters ; each chapter has one or more articles ; the sections corresponding to our headings, and the chapters to our votes. But the grouping of charges in the chapters occasionally does not correspond with our votes. For the description and subject matter of the sections and chapters, to save repetitions, I refer to Tables IV, V, VI. The English estimates comprise charges for disembodied militia, yeomanry, volunteers, and enrolled pensioners, and army reserve force. The French budget comprises only the effective regular forces and the gendarmerie.

The charges in the English estimates extend from the 1st April, 1863, to the 31st March, 1864 ; but the French budget commences on the 1st January, 1864, and ends 31st December, 1864 ; both budgets comprise an extra day for leap year. The English estimates were ordered by the House of Commons to be printed on the 15th February, 1863. On the 13th January, 1863, the French Minister of War presented the budget fixing the number and cost of the army for 1864, with an apology that for the preceding three years he had not been able to have the budget ready to present to the Legislative Body at its first meeting, but in conformity with the desire of the emperor, and their own repeated wishes, the army budget was presented for their earliest consideration and votes.

Total Charge for the English and French Armies for 1863-64 and 1864.

English.		French.		Sterling.
	£		fr.	£
For effective ser- vices	12,932,399	For effective ser- vices	371,284,040	14,851,361
For non-effective services		For non-effective services	60,740,000	2,533,600
	2,127,838	Credit for military pensions.....	2,600,000	
Total	15,060,237	Total	434,624,040	17,384,961

Repayments in diminution of charge to the amount of 19,544,725 frs. are enumerated by the French Minister by the sale of powder to other departments of the State, for the sale of horses, retention of 2 per cent. of the pay of officers, repayments for education, &c., deductions from troops while in hospitals, calculated at one twenty-fifth of the effectives, one-sixteenth for men on leave of absence, &c., &c., reducing the expenditure to 351,739,315 frs. ; but I do not propose to take these fluctuating repayments in different years

* *Vide* Tables IV, V, VI.

into consideration in either army in making averages with respect to the fixed annual charge for the French or English troops.

In taking the cost per head of the effective and non-effective strength, respectively, and the total cost per head of each army, the question of the number of men to be used as the divisor being determined, the total cost per head, effective and non-effective, presents no difficulty. The result is 101*l.* 11*s.* 10*d.* per head in the English army, and 43*l.* 9*s.* 4*d.* in the French; but this would embrace a fallacy, for the English estimates include charges for the disembodied militia, yeomanry, volunteers, and enrolled pensioners, of which the numbers are not given, and which should be included in the divisor of 148,242, which is the total number of effectives. The charge for these auxiliary forces is 1,222,977*l.*, leaving 13,837,260*l.*, inclusive of the charge for the non-effective services, and giving, therefore, 93*l.* 6*s.* 10*d.* per head for the maintenance of 148,242 effectives, and for the non-effective services. But to get at the real cost of the effective service, it is further necessary to make deduction of 2,127,838*l.* for the non-effective services, leaving 11,709,422*l.*, or 78*l.* 18*s.* 5*d.* per head, which is still more than double the cost of the French effectives per head. The French army consists of 400,000 effectives, besides 5,692 enfants de troupe. The cost is 371,284,040 frs. for effectives, and 63,340,000 frs. for dotations and pensions, in all 434,624,040 frs, or 43*l.* 11*s.* 10*d.* per head. But confining the comparison to the effectives of both armies, clothing, provisions, &c., included, the English cost as stated is 78*l.* 18*s.* 5*d.*, and the French 37*l.* 2*s.* 6*d.* per head, comparing pay alone, and excluding all other charges, the following are the results:—English of all arms, 147,118; pay and allowances, 4,967,603*l.*, equal to 33*l.* 15*s.* 3*d.* per head. The French per head, 16*l.* 13*s.* 4*d.**

II.—*The Administration, the Pay and Allowances of both Armies compared.*

ADMINISTRATION OF THE ARMY.

Taking next the administration of the army, which in the English army comprises the Secretary of State for War, War Office, Commander-in-Chief and his office, and the offices of the adjutant and quartermaster-general. The Secretary of State for War has a salary of 5,000*l.* per annum; the number of officers and clerks employed is 601, and the charge for 1863-64 is 164,917*l.*† This gives a cost of 1*l.* 2*s.* 3*d.* for each effective soldier. The other part of the administration of the army is the Commander's-in-Chief department, including the adjutant and quartermaster's-general departments,

* *Vide* Table VII.

† *Vide* pp. 66, 67 of the estimates.

charged 48,260*l.* for 123 officers and clerks, besides soldier clerks and servants. The Secretary of State and Commander's-in-Chief departments, together, amount to 213,177*l.*, or 1*l.* 8*s.* 8*d.* for each effective. But in the charge for the administration are the salaries of several great functionaries, such as inspector-general of engineers and director of works, director of ordnance, commissary-general-in-chief, purveyor-in-chief, &c., whose salaries in the French budget are either classed in the *etat-major*, or in the respective departments to which they belong. The administration of the army, 213,177*l.*, and the general staff, 114,576*l.*, together make 328,153*l.*, or 2*l.* 4*s.* 3*d.* per head. On the other side, the French charge their general officers on the *etat-major*, while in the English estimates 164 general officers, at a cost of 77,782*l.*, are charged in the non-effective services, and are therefore taken out of the comparison of the cost of the English staff with the *etat-major*. The French administration of the army constitutes section 1, and chapters i, ii, and iii of the budget. The first is called the administration central (personal), and is charged 1,910,538 frs. (*vide* Table VIII), and employs 479 officers and clerks, besides messengers and servants. The salary of the Minister at War is 130,000 frs. (5,200*l.*) per annum. The administration central (material) embraces repairs, furniture, books, papers, clothing of servants, &c., and costs 549,600 frs.; the third branch under the War Minister is the *dépôt général de la guerre*, and embraces charges for scientific instruments, maps, engravings, geodetical and topographical labours, photography, &c., and costs 144,500 frs.; the total charge for the administration of 400,000 men, by the Minister for War, is therefore 2,604,538 frs., or 5*s.* 5*d.* per head.

ETATS-MAJORS.

The next section in the French budget, and chapter iv, relates to the *etats-majors*. It has five articles, and it embraces the marshals of France, generals of divisions, generals of brigade, and staff officers of all grades in France and Algeria who are not with their regiments. The number is 794 employed, and there is a reserve of 78 plus 2 generals of divisions, and 260 generals of brigade, the total number being 1,054, and the charges 9,999,824 frs.; the staff officers of military intendance are 304, and the charges 3,173,152 frs. The staff of forts, cities, and towns, 710 officers; charge, 1,583,087 frs. The staff of the artillery, 1,477 officers and men, charges, 3,434,745 frs. The officers embrace directors of artillery, inspectors of arms, foundaries, professors in the artillery schools, &c. The 5th article of chapter iv gives details of the staff of the engineers, embracing 1,101 officers and men, at a charge of 3,083,490 frs.; there are 30 colonels who are directors of fortifications, 29 lieutenant-colonels,

sub-directors, 9 professors at the engineer schools, 111 chefs de bataillon, &c. The total number of men and officers employed in the etats-majors is 4,655, and the charge 21,280,298 frs., or 2*l.* 2*s.* 6*d.* per head upon 400,000 men. The average for each individual of the 4,655 officers and clerks is 183*l.* The nearest approximative comparison in the English army to the etats-majors is the general staff, but it consists entirely of officers, independently of the Secretary at War and his establishment. There are 261 commissioned officers at home and in the colonies, and the charge is 79,475*l.*; 6 lieutenant-generals, 21 major-generals, inspector-general of artillery, engineers, cavalry, and infantry, 14 colonels on the staff, 16 assistant-adjutants-general, &c., &c.; but the total charge, including staff serjeants, clerks, messengers, &c., is 114,976*l.*, which is a cost of 15*s.* 6½*d.* per head on the total strength; and the average cost of the 261 commissioned officers is 304*l.* 5*s.* per head, besides regimental pay; but to this should be added the charges for the administration of the army of 1*l.* 8*s.* 8*d.* per head; making with the general staff 2*l.* 4*s.* 3*d.* per head, the whole etats-majors of France being 2*l.* 2*s.* 6*d.* per head.

The nearest classification in the French army to admit of comparison with the English general staff is the first article of chapter iv of section 2. It comprises the 10 marshals of France, 90 generals of division, 160 generals of brigade, and other subordinate commissioned officers, to the number of 794, and the cost is 8,688,080 frs., or 438*l.* per head; but 7 of the marshals of France with commands receive each 133,650 frs., or 5,346*l.* per annum. And 74 generals of divisions provided with commands receive each 23,719 frs., or 948*l.* 15*s.* each, while English lieutenant-generals receive each 1,383*l.* 19*s.* 2*d.*, and a major-general commanding at Hong Kong has 2,535*l.* 15*s.* per annum. An English major-general in command in Scotland, Dublin, Cork, Chatham, &c., receives 69*l.* 19*s.* 7*d.* per annum. The French brigadier-general, the next grade below the general of division, has 60*l.* 11*s.* per annum.

PAY OF INFANTRY.

The average annual pay of the English infantry officers and soldiers for 81,000 men is 30*l.* 1*s.* per head, including extra pay for brevets, good-conduct pay, and beer money, agency, postage, &c. The average annual pay of the French infantry officers and soldiers is 14*l.* 17*s.* 6*d.*, including allowances or subscriptions to regiments, varying from 7,750 to 27,000 frs. to each regiment, donations to officers going into the field, half mountings, indemnity for wine and brandy not issued, increased pay for length of service, and other matters. *Vide* Table VIII A.

PAY OF CAVALRY OF THE LINE.

The English cavalry of the line, officers and men are 10,826, and the charge 448,980*l.*, or 41*l.* 9*s.* 8*d.* per man. It embraces the extra charges for good-conduct pay, beer money, &c., as in the infantry. The French cavalry of the line, 53,175, independently of 6,283 officers and men of the imperial guard, making a total of 59,379 cavalry, is charged at 4,426,716 *frs.*, or 18*l.* 1*s.* 8*d.* per man; including subscriptions and indemnities varying from 9,000 *frs.* to 13,000 *frs.* per regiment; deductions are made while absent on leave, while in hospital, and indemnities are given in place of billets.

PAY OF ARTILLERY.

The pay of the English artillery, horse and foot, 22,372 men, including 1,882 at the *depôt*, costs 870,602*l.*, and gives 38*l.* 1*s.* 3*d.* per head. The French artillery comprises 34,888 men, horse and foot, besides 2,985 of the imperial guard, making a total of 37,873, the cost of the pay being 17,359,464 *frs.*, or 18*l.* 6*s.* 8*d.* per head; but with the addition of subscriptions, two of 18,000 *frs.* and 19,000 *frs.* respectively, to two regiments of the imperial guard, and indemnities, the total charge for the artillery is 19,326,017 *frs.*, or 20*l.* 8*s.* 4*d.* per head.

PAY OF ENGINEERS.

The Royal Engineers consist of 4,906 men, including 401 officers; the pay and allowances are put down at 277,142*l.*, or 56*l.* 9*s.* 9*d.* per head. The French engineers, besides those of the imperial guard, consist of 6,968, including 260 officers, and the cost is 2,937,936 *frs.*, or 16*l.* 1*s.* 4*d.* per head only. This extraordinary contrast is owing to a very much greater proportion of officers to men in the English than the French engineers; the latter having 3·7 per cent. of officers to men; the English, 8·17 per cent.

MILITARY TRAIN.

The English military train consists of 1,840 officers and men, and costs 71,381*l.*, or 38*l.* 1*s.* 4*d.* per head. The French military train consists of 4,722 officers and men, and costs 2,316,721 *frs.*, or 19*l.* 3*s.* 4*d.* per head.

ARMY HOSPITAL CORPS AND MEDICAL ESTABLISHMENT.

The English army hospital corps has only one commissioned officer and 939 men; total, 940, at a cost of 23,510*l.*, or 25*l.* -*s.* 2*d.* per head. The French army hospitals, on the contrary, have 1,144 officers and 3,249 hospital orderlies; total, 4,573; and the total cost, with gratifications and indemnities, is 4,921,884 *frs.*, or 43*l.* -*s.* 10*d.* per head, by far the highest paid service in the French army; but upon the

total strength of the army the charge is only 10s. 3*d.* per head. In the French army the medical establishment embraces the hospitals, medical staff, and army hospital corps. In the English army the hospital corps is charged under a distinct head from the medical establishments. The total charge for the latter is 255,993*l.*, besides the pay of the director-general, 1,500*l.* per annum, charged with Administration Vote 18. The medical officers number 253, including 6 inspectors-general, 22 deputy inspectors-general, 20 surgeons-major, and 147 staff assistant surgeons, &c.; the purveyor's staff numbers 86, besides 8 military officers for the general hospitals of Netley and Woolwich; the lunatic establishment, diets, medicines, &c., and the pay of the purveyor-in-chief, is provided for in Vote 18, of 757*l.*; making a total charge of 281,260*l.* But as the number of extra clerks and men of the hospital corps employed at extra pay is not given, the average charge per head of the medical establishment cannot be given, but the cost per man on the strength of the army is 1*l.* 17*s.* 11*d.* The hospital charges, diets, medicines, &c., in the French army are estimated on the probable number of days each soldier will be in hospital; this number of men the French calculate at $\frac{1}{25}$ th, or 4 per cent., of the total strength. Thus, at 1 fr. 35 c., or 11½*d.*, per diem, with extra charges, the cost is 14,753,650 frs., which would bring up the total expense per head for the army to 1*l.* 10*s.* 8*d.* per head. 321,179 men only of the French army are entitled to be taken into hospital, and from past experience it is calculated that each man will be 18 days in hospital annually, which, at 1 fr. 35 c. each per day, gives 7,806,944 frs.; and the cost of the school of medicine, expenses of medical inspections, support of 280 sisters of charity, 58 chaplains, 761 officers de santé, 325 adjutants, and 3,429 hospital attendants, &c., make up a total of 9,911,122 frs.; which, with the charges for hospital officers and attendants, makes up the 14,753,650 frs. It will be observed in the comparative pay table of English and French regiments of the line that the surgeon major of the first class in the French army gets better paid than the lieutenant-colonel of the regiment.

COMMISSARIAT OFFICERS.—PROVISIONS AND FORAGE.

The total charge in the English army for 1863-64 is 1,223,936*l.*, besides 1,000*l.* per annum for the commissary-general-in-chief; therefore the cost per head is 8*l.* 5*s.* 2*d.*; 198 officers are employed besides a commissary-general-in-chief, with 1,000*l.* per annum, at a cost of 68,251*l.*, averaging 343*l.* per officer; and the number of clerks, storekeepers, &c., is not given; but the total cost of the commissariat staff is 97,329*l.*, and 20,897*l.* in Votes 1 and 3 are charged for pay and clothing of the commissariat staff corps. In the appendix to Vote 2 the cost of the commissariat is put at 1,330,943*l.*, instead of

1,223,936*l.* It is not stated for what numbers rations and forage are required, but a lump sum of 463,486*l.*, after stoppages, is fixed; neither the cost nor quantities of each ration is mentioned; lump sums only are given, and the House of Commons is destitute of the elements for pronouncing a judgment upon the proper cost and extent of each ration, or to what numbers rations ought to be given. The French budget, on the contrary, gives the exact number of persons to receive rations, including labourers, 3,565; the exact number of officers and men of all arms entitled is 348,207, but only 127,443,762 rations are charged for 366 days; and the whole is put down at 25,673,239 frs., or 1,026,929*l.*, for 400,000 men, instead of 1,223,936*l.* for 148,242 men. The average cost, therefore, is only 20 c. and $\frac{7}{1000}$ per ration, or 2*d.* and a fraction English.* Forage is provided for 83,484 horses; the cent-gardes and the native cavalry in Algeria are excluded; and the number of rations granted for 366 days is 30,555,144, at 1 fr. 25 c. the ration, the total cost being 38,622,995 frs., including the Paris guard of 663 horses, at 1 fr. 35 c. the ration.† The English charge for forage is 443,955*l.* or 11,098,875 frs. The warming and lighting in the French budget has the same minute details, particularizing the number of rations of firing, and the number of lights,‡ the cost of each ration and light, the whole charge being 2,813,654 frs.; and the whole of the commissariat charges, 68,772,140 frs., or 6*l.* 18*s.* 4*d.* per effective man of the army. The cost for fuel and lights in the English estimates, in the barrack department alone, amounts to 278,537*l.*, which must be added to the commissariat charges to admit of a proper comparison with the cost of the French commissariat; making the English charge per head 10*l.* 2*s.* 9*d.*, against the French 6*l.* 18*s.* 6*d.*

RATIONS.

The French and English rations for the soldier are stated in the following table, and for the sake of rigid comparison I have reduced them to English grains of 7,000 to the lb. avoirdupois. The French soldier always gets nearly half as much more bread than the English soldier in garrison, and in the field he gets nearly as much meat, but in garrison a-third less. He has smaller quantities of sugar, meat, and salt, and no tea or pepper, but he gets more coffee, and vegetables, and wine or brandy, which the English soldier does not get; and no deduction is made for his rations, while the English soldier has to pay 4½*d.* or 6*d.* per diem for his rations. The French soldier gets an indemnity in money for any portion of a ration not given, but the entire rations, with the exception of bread, are not necessarily given. 800 grammes cooking fuel are allowed.

* *Vide* Table IX.

† *Vide* Table X.

‡ *Vide* Table XI.

English Home Daily Rations.				French Daily Rations.		
Ration.	Weight.	Reduced to English Grains.	At Aldershot or Encamped.	Rations.	Weight.	Reduced to Grains English.
	ozs.				Grammes.	
Meat	12	5,250	5,250	Meat in the field	300	4,650
				Meat in garrison	250	3,875
Bread	16	7,000	10,500	Bread	750	11,625
Sugar	2	—	875	Sugar	21	325
Coffee	$\frac{1}{3}$	—	146	Coffee	16	248
				Rice	30	465
Tea	$\frac{1}{6}$	—	73	Tea	None	None
Salt	$\frac{1}{2}$	—	219	Salt	16 $\frac{1}{4}$	155
Pepper ..	$\frac{1}{36}$	—	12	Pepper	None	None
Wine	None	None	—	Wine	25 centi-litres	About half an English pint
				Pulse, beans &c.....	60 grammes	930
Vegetables	None	None	—	Brandy	$\frac{1}{16}$ th of litre	$\frac{1}{8}$ th of a pint
The English ration of bread and meat is supplied at a deduction of 4 $\frac{1}{2}$ d. per diem. Groceries and vegetables are supplied for 1 $\frac{1}{2}$ d., if required, per diem. In tents at home, 1 $\frac{1}{2}$ lb. of bread is given, and 3 lbs. of fuel; 1d. daily is given as beer money to every soldier at home, and they find their own spirits; abroad, a gill of rum or arrack is included in the ration.				Beer or cider $\frac{1}{2}$ litre, or about a pint. The French gramme is 15·436 English grains of 7,000 to the lb. avoirdupois. To save trouble, the reduction is made at 15 $\frac{1}{2}$ grains to the gramme. Indemnities for wine or brandy are charged for the imperial guard 29,084 frs., and for the line 326,123 frs., for troops serving in France 851,912 frs.; for troops serving in Algeria 18 to 21 c. are given.		

CLOTHING.

The total charge of the clothing department is 630,385*l.*, of which 61,758*l.* is for officers and establishment, besides the pay of a director and assistant director, charged in Vote 18, of 1,200*l.* and 800*l.* respectively, making 63,578*l.* Lump sums only are charged for each arm of the service, horse artillery, cavalry, infantry, foot guards, &c., but neither numbers nor the cost of clothing per man in each rank is given, nor what ranks and numbers are excepted from the supply. The total charge for clothing and necessaries is 560,221*l.*; the cost per head, therefore, for 140,754 men, deducting 7,488 officers, is 4*l.* 9*s.* 7*d.* per head. The French budget, on the contrary, gives the cost of the uniform of each rank in the different arms of the service, and the number of suits required.* The charge for the officers and establishment (personnel) is 291,070 frs. Clothing is provided for 336,626 non-commissioned

* *Vide* Table XII.

officers and privates of all arms; the total charge being 21,177,191 frs., flannel bands being supplied to 43,697 men in Algeria at an expense of 86,400 frs., or 1 fr. 80 c. per head. The cost per man, for his uniform, in the imperial guard, ranges from 105 frs. 14 c., for the guides, to 52 frs. 30 c., for the voltigeurs; and from 48 frs. 90 c. to 38 frs. 50 c. for the infantry of the line. In the cavalry, from 80 frs. 5 c., for the chasseurs d'Afrique, to 50 frs. 41 c., for the dragoons; and the artillery and engineers range from 69 frs. 10 c. to 48 frs. 90 c. The most costly uniform for a non-commissioned officer of the guides being 4*l.* 4*s.* 3*d.*; of an infantry soldier, 1*l.* 12*s.* 11*d.*; of a trooper of cavalry of the line (lancers), 2*l.* 1*s.* 4*d.*; of the artillery, 2*l.* -*s.* 8½*d.*; and of the engineers a trifle less. From a return to the House of Commons, obtained by General Peel on the 28th July, 1859, the cost of a non-commissioned officer or private's uniform of the life guards is stated to be 8*l.* 15*s.* 3*d.*; of dragoons, 5*l.* 8*s.* -¾*d.*; of the artillery, 3*l.* 1*s.* 6¼*d.*; of the engineers, 3*l.* 15*s.* 8*d.*; of the regiment of guards, 4*l.* 2*s.* 8*d.*; of the infantry of the line, 2*l.* 6*s.* 3*d.*; and of a West India regiment, 2*l.* 1*s.* 11¼*d.* The average cost per head, deducting officers in the English army, is 4*l.* 9*s.* 7*d.*, and in the French army, 1*l.* 19*s.* 11*d.* The non-commissioned officers* in the French army have a uniform which costs a little more than that of the privates. In the English army there is no distinction. The French soldier only gets a tunic once in two years; the English soldier gets one every year. Both English and French soldiers get a pair of pantaloons annually. On entering the service every soldier is allowed what is called "*première mise de petit équipement.*" An infantry recruit is allowed 40 frs., a zouave 118 frs. The allowance is to provide shirts, shoes, gaiters, &c. A master workman entering a regiment gets 170 frs. as his *première mise*.

III.—*Cost of Barracks, of Military Justice, and of the Manufacture of Instruments and Munitions of War.*

BARRACK DEPARTMENT.

The charges for the barrack department in the English army forms a very heavy item in the estimates, amounting to 635,637*l.*, besides the salary of the superintendent, 707*l.*, charged in Vote 18, administration of the army. The establishment consists of 537 persons, barrack-masters, barrack-serjeants, &c., at a cost of 41,380*l.* The supplies of furniture, beds, fuel and lights, lodging money, and hire of barracks make up the rest. The cost per head is 4*l.* 5*s.* 4*d.* As in the clothing department, lump sums only are given; neither the number of beds nor other articles of furniture, nor the number of

* *Vide* Table XII.

persons to whom lodging money is given, nor the number of lights and fires are given, but sums, amounting to 126,500*l.*, are placed to bedding, furniture, washing beds, and bedding straw; and 12,219*l.* is charged for emptying cesspools (for the purchase of their contents for agricultural purposes it might have been supposed there would have been offers). 80,000*l.* is granted to the staff, departmental, and regimental officers for lodging money. In the French analogous department, headed "*lits militaires*," the cost for all the furniture required for a soldier of each arm is given, the numbers, &c., supplied, the amount of lodging money to each individual of each rank, the grant for repairs of each article of furniture; in fact, the most minute details of expense are given (*vide* Table XII). The total charge is 6,576,951 frs., or 13*s.* 6½*d.* per head; but it does not include lights and firing, which in the English estimates amount to 278,537*l.* And to the French barrack department should be added from the engineer charges 10,536,090 frs. for "*bâtimens militaires*," their maintenance, repairs, &c., all which is superintended by the engineers. This sum, added to the 6,576,961 frs., brings up the charge to 1*l.* 15*s.* 7*d.*, still leaving a vast discrepancy between the charge per head for barracks for the English and French armies.

MARTIAL LAW.

The charge for the administration of military justice in the English army is 43,012*l.*, or 5*s.* 9*d.* per head; but the real charge is 79,602*l.*, the sum of 41,000*l.* being deducted for the full pay of men confined in military prisons;—the judge advocate-general getting 2,000*l.* per annum, and the deputy judge advocate-general 1,200*l.* per annum. There are no such officers in the French army, but 37 "*commissaires impériaux*," or deputy judge advocates, and 37 reporters, who attend courts-martial, and who receive 125,700 frs., or 1,698 frs., or 68*l.*, each. The total charge is 1,260,987 frs., or 2*s.* 6*d.* per head. The charges embrace expenses of courts-martial, allowance to witnesses, hire of rooms, lights and fire, the cost of military and industrial prisons, provisions, washing, office expenses, &c., the cost of all of which is given in great detail. The difference of the cost per head between the English and French armies would seem to originate in the high salaries of the judge advocate-general and deputy and their establishment, amounting to 22,852*l.*, and the cost of prisons, 26,486*l.*; besides occasional judge advocates appointed for local courts-martial not charged in the estimates. The officers for the dispensation of military justice are permanent in the French army. In the English army acting judge advocates are appointed as their services are required. The prison establishments are permanent in both armies.

MANUFACTURING DEPARTMENT.

The charges in this department constitute the English Vote 12, and amount to 956,365*l.* The establishments cost 35,871*l.*; wages and police, 455,582*l.*; materials, 407,480*l.*, which is 301,474*l.* less than last year, and constitutes part of the so-called retrenchment; machinery, 15,315*l.*; buildings, 33,967*l.*; miscellaneous charges, 8,150*l.*; total, 956,365*l.* Neither quantities nor numbers of work-people, nor out-turn of work, are given for any of the factories. For instance, in the Royal Gun Factory, a lump sum of 127,280*l.* is put down for "materials;" whereas in the French budget 534,000 frs., or 22,250*l.*, only is put down for 200,000 kilograms of metals for 465 cannon, averaging 57*l.* 3*s.* per cannon. In the Royal Laboratory, 96,540*l.* is charged for materials. In the Small Arms Factory, 133,428*l.* for foremen, artificers, and others, and 34,307*l.* for materials. But in addition to the charges under this vote, in Vote 13, there is the charge of 838,369*l.* for the establishments and for the purchase of warlike stores for the army and navy, charges for store departments, small arms, iron ordnance, gunpowder, &c., at the rate of 5*l.* 13*s.* 6*d.* per head of the army, making, with the preceding vote, 12*l.* 2*s.* 6*d.* per head for the manufacturing departments, against 2*l.* 13*s.* 11½*d.* in the French army. No statement is made of the cost of an Enfield rifle, nor the number to be turned out in the year for the money asked for. Of course the House of Commons has no means whatever of forming a judgment of the propriety of the charges. The Royal Small Arms Department is put down at 181,944*l.* (in 1862-63 the sum was 256,817*l.*); Gunpowder Factory, 75,617*l.*; Gun Factory, 249,104*l.*; and the Gun Carriage Factory, at 204,930*l.*;—neither numbers nor cost of a gun of each calibre, nor gun carriage, is given, nor cost of a barrel of powder. The French budget gives the cost of each 100 kilograms of powder, from 286 frs. 27 c. for extra fine, to 146 frs. 52 c. for powder for war, down to 110 frs. 2 c. for mining powder, the prices running through eight varieties; and 6,654,200 kilograms is the amount to be allotted to the various arms of the service, including civil departments and the navy. In the Foundry, 165,000 kilograms of bronze, at 2 frs. 60 c. the kilogram, and 35,000 kilograms of copper, zinc, and tin, at 3 frs. the kilogram, are charged for casting of 465 guns of different calibre, weighing 200,000 kilograms. 104,000 frs. is the total cost for casting 465 cannon. The small arms to be manufactured in 1864 are 32,000 infantry rifles of the pattern of 1857; carbines, 6,000; cavalry sabres, 1,000; 10,000 bayonet sabres; 1,200 cuirasses, model of 1855; consequently the Legislative Chamber has the means of forming a judgment on quantities and prices, which the House of Commons does not possess. The small arms are distributed to private manufacturers at

St. Etienne, Mutzig, Chatellerault, and Tulle, who have concessions for twenty or fifteen years from certain dates. The establishment and material for the artillery is put down at 7,426,655 frs.; of the establishment and materials for the engineers, 10,951,890 frs.; of powder and saltpetre establishment, 882,482 frs., and the materials for gunpowder, at 7,508,983 frs.; total for the manufacturing establishments, 26,769,010 frs., or 2*l.* 13*s.* 11½*d.* per head of the army; and this embraces in the engineers' department the care and repair of fortifications. On the English side the purchase and manufacture of warlike stores for the navy is included in the estimates; but whatever charges are made for the supply of the navy with ordnance or warlike stores should be credited in the army estimates, and be charged in the navy estimates.

SMALL ARMS.

The charges for small arms (rifles, pistols, &c.) occur under the Votes 12 and 13. Under the former, for the manufacture, is 181,944*l.*, and under the latter, for the purchase, is 105,769*l.*, making a total of 287,713*l.*, or 1*l.* 18*s.* 9*d.* per head of the army effectives. Numbers are not given of the different arms manufactured, and in the manufacturing department the charge for materials is only 34,307*l.* In the French budget the numbers of the different arms to be purchased are given, and the charge is 2,060,000 frs.; and the repairing, altering, storing, &c., is put down at 1,449,230 frs.; the total being 3,509,230 frs., or 7*s.* 3½*d.* per head of the effective strength. The great charge per head in the English army is very probably referable to the cost of establishments, the English Government manufacturing the arms required; while the French, as before stated, contract for theirs. *Vide* Table No. XIV.

GUNPOWDER.

The charges for gunpowder are placed in Votes 12 and 13. The gunpowder factory is put down at 75,617*l.*, and the purchase of materials for gunpowder, Vote 13, at 133,688*l.*, or 1*l.* 8*s.* 2½*d.* per head; but the gunpowder made also supplies the navy, and as the *quantity* manufactured or purchased is not given, the 1*l.* 8*s.* 2½*d.* per head is necessarily not exact. But as the French, with the exception of a small amount, supply their navy from the army budget, the same objection arises as in the English average per head. The total cost of the French establishments is 882,482 frs., and materials, 7,508,903 frs.; for gunpowder in the French budget, 8,391,365 frs., or 17*s.* 6*d.* per head of the effective strength of the army. *Vide* Table XV.

REMOUNT.

The total number of horses in the English army supplied by Government is 14,511; the cost of the veterinary establishment, 3,921*l.*; and for the purchase of horses and medicines, 32,493*l.*; total, 36,414*l.*, which is a cost of 2*l.* 10*s.* 3*d.* per horse to keep the 14,511 horses annually efficient. From a return obtained by Sir Frederick Smith, on the 13th June, 1860, it would appear that the purchase of horses in 1858-59 cost 86,463*l.*, and in 1859-60 it was 55,792*l.*, and the number which died, were killed or sold as condemned in the former year was 1,352, and in the latter year, 1,290, making a total loss of 2,642 horses, a very serious and expensive loss, the regulation prices of horses being 26*l.*, 30*l.*, and 36*l.* respectively. In the English estimate the numbers required to complete are not given, and lump sums only are asked for; in the French budget, on the contrary, the exact number of horses required to complete in each denomination of the cavalry, whether of the imperial guard or of the line is stated; the total number required being 8,841, the price of each horse being fixed from 1,200 frs. for officers horses of the imperial guard down to 350 frs. for the light cavalry. The horses of the cavalry of the line, dragoons, and lancers, 650 frs.; of the cuirassiers, 800 frs.; and for draft horses for the artillery, 550 frs.; the total charge, including the veterinary establishment, indemnities, and divers expenses, is 5,429,250 frs.; and as the total number of cavalry horses or mules is 85,705, the cost of maintaining this number in a state of efficiency is 2*l.* 10*s.* 10*d.* per horse annually, the only approximation to an average charge in the English estimates and the French budget. But this approximation is chiefly owing to the French Government supplying the cavalry officers with horses. In the budget for 1864 officers of the imperial guard have 80 horses allotted to them at 1,200 frs. each, and the cavalry officers of the line have 900 horses allotted at 900 frs. each when purchased in France, and 500 frs. when purchased in Algeria. *Vide* Table XVI.

ROYAL GUN FACTORIES AND FOUNDRIES.

In the royal gun factories, in Vote 12, 6,890*l.* is charged for establishment, 127,280*l.* for material; for wages and other charges a total is made up of 249,104*l.*, for the gun factory; no statement is made of the quantities of gun metal required, the price per hundred-weight, the number of persons employed, or the number of guns turned out. In Vote 13 an additional sum of 124,333*l.* is entered for the purchase of iron ordnance and projectiles. The total of Vote 12 for the manufacturing department and the manufacture of warlike stores is 956,365*l.*, and of Vote 13, for military store establishments and warlike stores purchased, is 838,369*l.*; total

of both votes is 1,794,734*l.*; and this very formidable sum is 1,133,834*l.* less than was charged in the estimates for 1862-63. The object, however, under review is the cost of the materials for cannon and the purchase of cannon, and this is entered at 251,513*l.*, or a cost of 1*l.* 13*s.* 11*d.* per head of effectives for cannon alone. In the French budget, under the head of foundries' minute, details are given, for instance 165,000 kilograms of bronze, at 2 frs. 60 c. the kilogram, 429,000 frs.; 35,000 kilograms of copper, zinc, tin, &c., at 3 frs. the kilogram, 105,000 frs.; cost of manufacture of 465 pieces of cannon of different calibres, weighing 200,000 kilograms, 104,000 frs.; total, 638,000 frs. To this is added the forge department, purchases of iron, steel, tools, &c., 420,000 frs.; total, 1,058,000 frs., or 2*s.* 1*d.* per head of army effectives for cannon. No mention is made of the purchase of iron cannon in the French budget; and if the comparison be confined to the materials for bronze cannon, it will stand 17*s.* 2*d.* for the English per head, and 2*s.* 1*d.* for the French army. *Vide* Table XVII.

IV.—*Cost of the Military Education of the English and French Armies.*

MILITARY EDUCATION—ENGLISH.

The following establishments exist in the English army for military educational purposes, namely, the Council of Military Education, Royal Military Academy at Woolwich, Royal Military College at Sandhurst, regimental and garrison schools and libraries, Royal Military Asylum at Chelsea, Royal Hibernian Military School at Dublin, Department for Instruction of Artillery Officers, and the Military Medical School. The total charge is 172,201*l.*, or 1*l.* 3*s.* 2½*d.* per head of the army effective strength. The Commander-in-Chief is the president of the Military Council of Education, and the vice-president, a major-general, gets 1,000*l.* per annum, besides unattached pay; the second member, also a major-general, gets 600*l.* per annum, besides retired full pay. There are five members besides the Commander-in-Chief, one secretary, seven clerks, one office keeper, and one messenger; the total cost of the council being 8,174*l.* per annum. The Royal Military Academy at Woolwich costs 41,872*l.* per annum. The Royal Military College costs 48,726*l.* per annum, the governor receiving 1,000*l.*, besides pay of commandant of royal engineers. The Royal Military College embraces the Cadets' College and the Staff College; 20 Queen's cadets, orphan sons of officers who have died in the service, in reduced circumstances, are educated here gratuitously and 20 Queen's cadets, under similar circumstances, for the army of India, are nominated by the Secretary of State for India, for which 3,000*l.* per annum is paid out of the revenues of India. The military branch of the Royal Military Asylum, Chelsea,

including provision for 500 boys, costs 10,491*l.* per annum, and the educational branch, 4,106*l.* per annum. The Royal Hibernian Military School, Dublin, costs, for military and educational branches, 12,921*l.* per annum. The Chelsea and Dublin asylums are for the children of soldiers. The regimental and garrison schools and libraries cost 37,708*l.* per annum; there are general and local inspectors, and first, second, and third-class schoolmasters and schoolmistresses. The Department for the Instruction of Artillery Officers is intended to instruct officers in the higher branches of artillery. An allowance is made to some of the officers to enable them to visit fortifications and manufacturing establishments; this cost is only 1,918*l.* per annum, with one director, one topographical drawing master, a German and French master, and a clerk. The Survey and Topographical Department costs 85,441*l.* The director receives in all 1,345*l.* per annum. The great survey of the United Kingdom is under the director, and the cost for 1863-64 is put down at 67,000*l.* Vote 17 embraces miscellaneous services, Ordnance Select Committee at Woolwich, president with 1,075*l.* per annum, vice-president, and four members; Iron Plate Committee; Armstrong and Whitworth Guns Committee; Royal Artillery Institution, Woolwich; subscriptions to Lock and other hospitals, 1,354*l.*; and charge for the Guernsey and Jersey militia, 11,870*l.* The total charge for Vote 17 is 88,135*l.*, and the total for military education, as previously stated, 172,201*l.* Throughout, the number of pupils or scholars is not given, so that a judgment cannot be formed of the cost per head for instruction.

FRENCH MILITARY EDUCATION.

The French army has eight military colleges and schools, which are subdivided into fifteen, including the Pyrotechnic at Metz, respectively placed at Auxonne, Besançon, Bourges, Douai, Grenoble, La Fere, Metz, Rennes, Strasbourg, Toulouse, Vincennes, and Valence, and the regimental schools.

FRENCH MILITARY SCHOOLS.

1. The Imperial Polytechnic costs 664,300*frs.* 2. Imperial Special Military School, 1,285,938*frs.* 3. Prytanée, 492,000*frs.* 4. Cavalry School, 236,425*frs.* 5. Imperial School for the Etat - Major, 89,000*frs.* 6. School for Artillery and Engineers, 99,500*frs.* 7. Gymnase and School of Musketry, 36,270*frs.* 8. Regimental schools, 100,000*frs.* Total, 3,004,033*frs.*, or 7*s.* 1*d.* per head of the effective army. In the Polytechnic 260 pupils are to be educated, and 130 pupils to be admitted; 210,000*frs.* are paid for board. The outfit of 20 new pupils is put down at 4,000*frs.* The repairs of the building are charged in the school accounts. There are 51 professors and teachers and 63 administrators. In the Special Imperial School

600 pupils are to be educated, and 300 pupils are to be admitted; 567,600 frs. are paid for board, which would indicate that the cost of a military education at that school is about 38*l.* 1*s.* per head; 47 commissioned officers of different arms are attached to this school, 3 doctors, and 164 sub-officers and privates; there are 19 instructors and 72 administrators. The pupils in the Prytanée are 430, and the board to be repaid only 97,000 frs., or 9*l.* 7*s.* 6*d.* per pupil; 29 military men are attached to the school, 40 instructors, 3 chaplains, and 64 administrators. The School of Cavalry has 240 brigadiers, instructors of pupils, and 30 to 40 farrier-majors. The number of officers and sub-officers under instruction varies. There are 76 riding masters and other instructors. The School of Instruction for the Etat-Major has 50 sub-lieutenants constantly under instruction. The Artillery and Engineer School has 170 artillery pupils, of which 120 are for the artillery, and 50 for the engineers; 25 persons, professors, artists, librarian, &c., are on the establishment. The numbers of pupils and teachers in the Gymnasium and School of Musketry, and regimental schools, are not given. 1,510 pupils are under constant education in five schools; the numbers in the cavalry, gymnasium, and regimental schools are not given. The repairs of all the college and school buildings are charged in the accounts of each school, and not in the public works' department. The total charge for military education is 3,004,033 frs., or 7*s.* 1*d.* per head of total effectives.

V.—Miscellaneous Charges of the English and French Armies.

WORKS AND BUILDINGS AT HOME AND ABROAD.

Besides the 635,637*l.* in the English Vote 4 for salaries, furniture, and hire of barracks at home for the barrack department, in Vote 14 there is a charge of 810,941*l.* for works and buildings at home and abroad, besides the pay of an inspector-general at 1,500*l.* per annum, deputy director of works and fortifications, 700*l.* per annum, and a deputy director of works for barracks, 700*l.* per annum, charged in Vote 18; each of these officers has the addition of regimental pay. The cost per head of the effective army for Vote 14 is 5*l.* 9*s.* 4½*d.*, minus the inspector-general and deputies' salaries; and this is in addition to 4*l.* 5*s.* 9*d.* per head for the barrack establishment of Vote 4. Total for works, buildings, and barracks, 9*l.* 15*s.* 1½*d.* per head of effectives. The cost of officers and clerks, besides office-keepers and messengers, numbering 911 persons, is 80,512*l.*, besides 2,900*l.*, salaries of inspector-general and two deputies. In the works, Vote 14, new hospitals, new barracks and enlargement of barracks, purchase of land, conversion of buildings, &c., are included. A comparatively small sum is put down as cost of fortifications, but this is independent of the Parliamentary grant, at a prospective cost of 11 to 12 millions

sterling. In the French budget there is neither a distinct barrack establishment nor an establishment of works, buildings, and fortifications. The fortifications are under the engineer corps, and for new fortifications, repairs, or adaptations, in France and Algeria, 3,300,000 frs. are granted; and for the purchase of land, 60,000 frs.; military buildings, alterations of barracks, hire of buildings, exercise grounds, &c., 7,176,090 frs., and 415,800 frs. for civil servants; total, 10,951,890 frs. The engineer corps and establishment embraces, in fact, the three distinct English establishments of engineers, barrack department, and works and building department. The total cost to the French Government for all these objects is 1*l.* 2*s.* 6½*d.* per head of the effective strength of the army, instead of 5*l.* 9*s.* 4½*d.* per head for works and buildings, and 4*l.* 5*s.* 9*d.* per head for barracks (total, 9*l.* 15*s.* 1½*d.*) in the English army.

RECRUITING.

The tenth chapter of the third section of the French budget is devoted to the details of the payments consequent upon the annual ballot for the conscription; payments to prefects; printing of lists of those amenable to the ballot; indemnities to sub-prefects in respect to appeals; fees to examining medical officers; charges for conducting recruits to their stations, and extraordinary expenses, amounting in all to 689,479 frs., or 27,579*l.*

SADDLERY.

Chapter xiii of section 3 of the French budget gives the charges for horse equipment;* each saddle is to last twenty years, and each schabraque and saddle-cloth eight years. The guard imperial saddle costs 133 frs. 35 c.; schabraque, 58 frs. 10 c.; saddle-cloth, 29 frs. For the line respectively 124 frs. 22 c., 35 frs. 18 c., and 18 frs.; the exact number of each article required to replace is given.

COLONIAL EXPENDITURE.

Before passing to the charges for non-effectives, it may be noticed that the charge for the colonies included in the English estimates is 3,620,256*l.*, besides the supply of arms, barrack, hospital, and other stores; the contribution of the colonies toward the cost of their own defence is ridiculously small, 78,700*l.*, and there is an uncertain amount from the colonies of Australia.

NON-EFFECTIVE SERVICE.

In the English estimates nine votes are taken under this head. For rewards for military services, 25,933*l.* Pay of general officers,

* See also Table XVIII.

77,782*l.*; numbers, 164. Pay of reduced and retired officers, 464,895*l.*; numbers, 2,866. Widows' pensions and compassionate allowances, 172,157*l.*; numbers, 2,708; children, 1,518. Pensions and allowances to wounded officers, 32,843*l.*; numbers, 310. In-pensions, that is to say, in Chelsea and Kilmanham Hospitals, 33,776*l.* Chelsea has only 538, and Kilmanham 141 in-pensioners, besides numerous establishments. Out-pensions, 1,142,702*l.*; numbers, 61,144; superannuation allowances, civilians, 144,964*l.*, and disembodied militia, 32,786*l.*; numbers, 838. The total sum asked for is 2,127,838*l.*, or 14*l.* 7*s.* 1*d.* per head of the effective strength of the army; and the number of military pensioners and half-pay, including the pay of 164 general officers, and 10 without regiments, is 64,853, besides 2,708 widows and 1,578 children. Nothing can be more honourable to the country than its provision, costly though it be, for those who have rendered good service to their country, or for their widows and children.

FRENCH BUDGET.

The French budget has not, in the non-effective service, the same subdivisions as in the English estimates. The heading is "*invalides de la guerre*," and embraces the celebrated *Hôtel des Invalides*, where the body of Napoleon the Great reposes, and which is governed by a marshal of France, with a salary of 1,600*l.* per annum; with 84 superior military officers, 228 officers and employés for the administration; 21 for worship; 47 doctors, sisters of charity, and barbers; and 33 in the architect and surveyor's department; total officials, 413; and 2,198 invalid soldiers; the total charge being 2,179,002 frs. The Imperial *Hôtel des Invalides* corresponds to the Chelsea and Kilmanham Hospitals. The next charge is officers non-effective, with temporary infirmities, 314, and 205 unemployed; total, 519. The total charge, 413,000 frs. The next charge is provision for incurables, 15; prolongation of non-activity, 25; and on the grounds of discipline, 75; total, 115. The total charge of the three articles, or subdivisions, is 503,000 frs. The next chapter (xxii) is for compassionate allowances to old soldiers, their widows, and orphans, and to those wounded; there is also a charge in this chapter of 43,000 frs. for Egyptian refugees. The total charge for the non-effective services is 4,555,002 frs., or 9*s.* 2½*d.* per head of the effective strength. But there is an additional outlay of 60,740,000 frs., under the head of dotation, or endowment of the army; provision for which is made by other means than directly from the treasury. The following is a condensed explanation of the method of providing the means, a great portion of the outlay being for bounties to men for re-enlistment, and increased pay for increased service.

DOTATION.

In the only two annexes to the French budget are the articles "dotation," which means endowment, and "list of officials lodged in Government buildings." For the year 1864 the dotation is put down at 60,740,000 frs., in addition to the cost of 371,254,040 frs. for the effective service of the army. The receipts and expenditure of the dotation fund are stated in the following way:—Expected purchase of substitutes by the 100,000 conscripts of 1863, to be called out in 1864, is estimated at 18,000 men who would pay for exoneration 2,500 frs. each, equal to 45,000,000 frs. Buying discharge for the remaining limit of service, at 550 frs. for each remaining year of service, estimated at 1,200 men at seven years' service, put at 4,400,000 frs. It would appear that part of this dotation money is annually laid out in purchase of stock in the public debt for forming a fund for the requisite endowments, pensions, and annuities. The available income of this fund in 1864 is calculated at 11,100,000 frs. The above, with two other small sums, make up the total of 60,740,000 frs. The objects for which this sum is accumulated comprise—first, premiums and annuities payable to men who have re-engaged in military service, in previous years, 11,500,000 frs. First part of premiums and annuities to those who may re-engage in 1864; 9,800 re-engagements are estimated at a cost of 2,200 frs. each, or 21,560,000 frs.; but as there is to be only a prompt payment to each of 1,000 frs., the rest being "*in futuro*," the charge for the year will be 9,800,000 frs. The next item is for increased pay of 10 c. or 20 c. to those who had re-engaged before 1864; this is put down at 5,000,000 frs. Premiums and annuities to obtain substitutes to fill up the vacancies of those who have exonerated themselves by the payment of 2,500 frs. each; the obligations for this are put down, for 8,000 vacancies, at 17,000,000 frs., but the prompt payment is 8,000,000 frs. Supplemental pensions to sub-officers, corporals, and for obtaining voluntary enlistments, is put at 1,900,000 frs. There are some other small charges for payments of the administration of the above disbursements; and the last item is purchase of stock of the public debt, 24,679,000 frs., to increase the dotation fund, and have available annual interest, making up the total 60,740,000 frs. But in addition to the above, an additional credit of 2,600,000 frs. for military pensions for 1864 is asked, making the total sum for dotation 63,340,000 frs. The second annex might well be adopted in the English estimates. It gives the number of rooms (*nombre de pièces qu'ils occupent*) occupied at the expense of the State by every public functionary, military or civil, recording their designation, in every department, and in every part of the country, from the War Minister to the

meanest servant. For instance, in the War Office, in Paris, the total number of pièces occupied is 106, from the chef du cabinet to the lamplighter. At the Polytechnic School the functionaries occupy 136 pièces; at the cavalry school, at Saumur, 19 pièces are occupied; at the Hôtel Impérial des Invalides, at Paris, 228 pièces are occupied, of which the marshal of France, the governor, has 71 for his own share.

Having completed the comparison of the cost of maintaining the English and French armies in their several departments, and in some detail, as far as harmonizing classifications permitted, it remains only for me to say that no Englishman can for a moment begrudge the proper outlay for securing to the British soldier comfort, health, efficiency, and self respect; but Englishmen have a right to insist that whatever public money is given for the maintenance of the efficiency of the British army should be devoted in the most economical manner to the purposes for which it is given, and the result of the comparisons in the preceding paper lead to the conclusion that such is not the case, particularly in the clothing, barrack, and warlike stores departments of the British army.

APPENDIX.

(I.)—*Effectif. Tableau Général de l'Effectif en Hommes et en Chevaux,*

Désignation des Armes.	Hommes.				
	Cadres des Régiments, Battalions, Escadrons, Compagnies ou Batteries.				
	Officiers.	Sous-Officiers et Employés y Assimilés.	Caporaux et Brigadiers	Soldats hors Rang, Tambours, Trompettes, &c.	Total des Cadres.
TROUPES FRANCAISES.					
<i>Etats-Majors—</i>					
Divisions territoriales de l'intérieur ...	2,483	1,732	—	—	4,215
Algérie	261	179	—	—	440
Total	2,744	1,911	—	—	4,655
<i>Maison de l'Empereur—</i>					
Escadron des cent-gardes	13	18	28	12	71
<i>Garde Impériale</i>	1,405	2,378	3,010	2,443	9,236 *
<i>Gendarmerie—</i>					
Divisions territoriales de l'intérieur	642	1,309	2,389	4	4,344
Algérie	21	48	90	—	159
Total	663	1,357	2,479	4	4,503
<i>Infanterie—</i>					
Divisions territoriales de l'intérieur	9,226	17,726	21,894	14,184	63,030
Algérie	789	1,493	1,869	1,064	5,215
Total	10,015	19,219	23,763	15,248	68,245
<i>Cavalerie—</i>					
Divisions territoriales de l'intérieur	3,186	3,622	4,953	4,371	16,132
Algérie	435	546	816	600	2,397
Total	3,621	4,168	5,769	4,971	18,529
<i>Artillerie—</i>					
Divisions territoriales de l'intérieur	1,396	3,181	2,812	4,368	11,757
Algérie	149	312	270	402	1,133
Total	1,545	3,493	3,082	4,770	12,890
<i>Génie—</i>					
Divisions territoriales de l'intérieur	226	440	425	473	1,564
Algérie	34	117	145	96	392
Total	260	557	570	569	1,956

APPENDIX.

servant de base à l'Etablissement du Budget de l'Exercice 1864.

Hommes.		Chevaux ou Mulets			Enfants de Troupe.	Désignation des Armes.
Soldats.	Total des Hommes.	D'Officiers.	De Troupe (Selle et Trait).	Total.		
TROUPES FRANCAISES.						
—	4,215	—	—	—	—	<i>Etats-Majors—</i>
—	440	520	—	520	—	Divisions territoriales de l'intérieur Algérie
—	4,655	520	—	520	—	Total
150	221	27	152	179	—	<i>Maison de l'Empereur—</i> Escadron des cent-gardes
20,687	29,923	839	7,109	7,948	571	<i>Garde Impériale</i>
15,262 570	19,606 729	686 39	12,756 484	13,442 523	468 20	<i>Gendarmerie—</i> Divisions territoriales de l'intérieur Algérie
15,832	20,335	725	13,240	13,965	488	Total
136,962 18,983	199,992 24,198	— 189	— —	— 189	2,710 113	<i>Infanterie—</i> Divisions territoriales de l'intérieur Algérie
155,945	224,190	189	—	189	2,823	Total
29,477 5,169	45,609 7,566	4,400 1,029	28,896 4,842	33,296 5,871	703 108	<i>Cavalerie—</i> Divisions territoriales de l'intérieur Algérie
34,646	53,175	5,429	33,738	39,167	811	Total
19,074 2,924	30,831 4,057	2,164 228	10,653 1,420	12,817 1,648	506 66	<i>Artillerie—</i> Divisions territoriales de l'intérieur Algérie
21,998	34,888	2,392	12,073	14,465	572	Total
3,895 1,117	5,459 1,509	9 60	230 540	239 600	110 2	<i>Génie—</i> Divisions territoriales de l'intérieur Algérie
5,012	6,968	69	770	839	112	Total

(I.)—Effectif. *Tableau Général de l'Effectif*

Désignation des Armes.	Hommes.				
	Cadres des Régiments, Battalions, Escradons, Compagnies ou Batteries.				
	Officiers.	Sous-Officiers et Employés y Assimilés.	Caporaux et Brigadiers.	Soldats hors Rang, Tambours, Trompettes, &c.	Total des Cadres.
<i>Equipages Militaires—</i>					
Divisions territoriales de l'intérieur	155	235	292	362	1,044
Algérie	145	208	284	370	1,007
Total	300	443	576	732	2,051
<i>Vétérans de l'Armée—</i>					
Divisions territoriales de l'intérieur	19	54	80	10	163
<i>Services Administratifs—</i>					
Intérieur	1,294	309	399	84	2,086
Algérie	699	136	216	36	1,087
Total	1,993	445	615	120	3,173
Total des troupes françaises	22,578	34,043	39,972	28,879	125,472
<i>CORPS ETRANGER.</i>					
<i>Infanterie—</i>					
Algérie	90	172	215	132	609
<i>CORPS INDIGENES.</i>					
<i>Infanterie et Cavalerie—</i>					
Algérie	561	783	1,014	576	2,934
Totaux généraux	23,229	34,998	41,201	29,587	129,015

en Hommes et en Chevaux—Contd.

Hommes.		Chevaux ou Mulets			Enfants de Troupe.	Désignation des Armes.
Soldats.	Total des Hommes.	D'Officiers.	De Troupe (Selle et Trait).	Total.		
1,304	2,348	156	1,732	1,888	32	<i>Equipages Militaires—</i>
1,367	2,374	182	2,604	2,786	29	Divisions territoriales de l'intérieur
						Algérie
2,671	4,722	338	4,336	4,674	61	Total
485	648	—	—	—	18	<i>Vétérans de l'Armée—</i>
						Divisions territoriales de l'intérieur
4,062	6,148	—	—	—	30	<i>Services Administratifs—</i>
1,502	2,589	160	—	160	12	Intérieur
						Algérie
5,564	8,737	160	—	160	42	Total
262,990	388,462	10,688	71,418	82,106	5,498	Total des troupes françaises
1,440	2,049	37	20	57	25	CORPS ETRANGER.
						<i>Infanterie—</i>
						Algérie
6,555	9,489	532	3,010	3,542	99	CORPS INDIGENES.
						<i>Infanterie et Cavalerie—</i>
						Algérie
270,985	400,000	11,257	74,448	85,705	5,622	Totaux généraux

(II.)—Section 2, Chapitre 4—Etats-Majors.

Effectif.				Nature des Dépenses.	Crédits Demandés pour l'Exercice 1864.		
Intérieur.		Algérie.	Total.		Divisions Territoriales de l'Intérieur.	Algérie.	Total.
Etat-Major Général et Corps d'Etat-Major.	Officiers hors Cadres.				fr.	fr.	fr.
				Section 2 ^e . ETATS-MAJORS—GENDARMERIE. Chapitre 4.— <i>Etats-Majors.</i> Art 1.—Traitement des Maréchaux de France, Officiers Généraux, Supérieurs et autres d'Etat-Major. (Loi du 4 Août 1839, et decrets des 20 Décembre 1851, 19 Février et 1 Décembre 1852.)			
				Section 1 ^{er} . TRAITEMENTS D'ACTIVITE. <i>Maréchaux de France—</i>			
10	—	—	10	<div><div>fr.</div><div>{ 7 pourvus de com- mandement }</div><div>935,550</div></div> <div>{ 3 sans commande- ment</div> <div>90,000</div> <td>1,025,620</td> <td>—</td> <td>1,025,620</td>	1,025,620	—	1,025,620
86	—	4	90	<i>Généraux de Division—</i> <div>{ 74 pourvus de fonc- tions</div> <div>1,755,274</div> <div>{ 16 en disponibilité</div> <div>151,920</div> <td>1,726,944</td> <td>180,250</td> <td>1,907,194</td>	1,726,944	180,250	1,907,194
151	—	9	160	<i>Généraux de Brigade—</i> <div>{ 156 pourvus de fonctions</div> <div>2,381,260</div> <div>2 en disponibilité...</div> <div>12,660</div> <div>{ 2 payés sur le cha- pitre 1^{er} (admi- nistration cen- trale)</div> <div>—</div> <td>2,231,920</td> <td>162,000</td> <td>2,393,920</td>	2,231,920	162,000	2,393,920
32	4	3	39	{ <i>Colonels</i> (dont 4 payés sur le chapitre 1 ^{er} (administration centrale) <div>—</div> <td>295,502</td> <td>27,030</td> <td>322,532</td>	295,502	27,030	322,532
32	2	3	37	<i>Lieutenants-Colonels</i>	268,028	18,420	286,448
104	37	6	147	<i>Chefs d'Escadron et de Bataillon</i>	876,618	36,120	912,738
136	—	13	149	<i>Capitaines de 1^{re} classe</i>	622,737	58,210	680,947
133	11	18	162	„ 2 ^e „	566,696	53,460	620,156
—	—	—	—	{ <i>Traitement</i> de 40 interprètes titulaires et de 35 auxiliares } <div>—</div> <div>200,000</div> <td>—</td> <td>200,000</td> <td>200,000</td>	—	200,000	200,000
—	—	—	—	{ <i>Frais de bureau</i> des chefs d'état-major <div>74,100</div> <div>—</div> <td>74,100</td> <td>—</td> <td>74,000</td>	74,100	—	74,000
—	—	—	—	{ <i>Remboursement</i> de frais extra- ordinaire aux officiers généraux } <div>20,000</div> <div>—</div> <td>20,000</td> <td>—</td> <td>20,000</td>	20,000	—	20,000
—	—	—	—	{ <i>Allocations spéciales</i> aux in- specteurs généraux d'armes } <div>141,900</div> <div>18,750</div> <td>141,900</td> <td>18,750</td> <td>160,650</td>	141,900	18,750	160,650
—	—	—	—	{ <i>Allocations extraordinaires</i> en cas de ressemblément de troupes, et pour les camps d'instruction <div>31,380</div> <div>—</div> <td>31,380</td> <td>—</td> <td>31,380</td>	31,380	—	31,380
—	—	—	—	<i>Gratification</i> d'entrée en campagne	—	28,600	28,600
—	—	—	—	{ <i>Indemnité</i> representative des vivres de campagne <div>—</div> <div>31,801</div> <td>—</td> <td>31,801</td> <td>31,801</td>	—	31,801	31,801
684	54	56	794	Totaux de Section 1 ^{er}	7,881,445	814,641	8,696,086
738							

(II.)—Section 2, Chapitre 4—Etats-Majors—Contd.

Effectif.				Nature des Dépenses.	Crédits Demandés pour l'Exercice 1864.		
Intérieur.		Algérie.	Total.		Divisions Territoriales de l'Intérieur.	Algérie.	Total.
at-Major Général et Corps d'Etat-Major.	Officiers hors Cadres.				fr.	fr.	fr.
20	—	—	260	<i>Section 2. SOLDE DE RESERVE.</i> 78 <i>Généraux de divisions</i> à 9,000 fr. } fr. 702,000 l'un, 360 <i>l.</i> per an. } 2 <i>Généraux</i> payés sur le chapitre 1 ^{er} } — } (administration centrale) } 180 <i>Généraux de brigade</i> à 6,000 fr. } 1,080,000 } l'un, 240 <i>l.</i> per an. }	1,782,000	—	1,782,000
998	56	1,044	Totaux de l'Article 1 ^{er}		9,663,445	814,641	10,478,086

(III.)—Décomposition de l'Effectif à entretenir dans les Divisions Territoriales de l'Intérieur.

Armes et Corps Spéciaux.

ETATS-MAJORS.

Maréchaux de France, officiers généraux, supérieurs et autres d'état-major.*Intendance militaire.**Etat-major des places.**Etat-major particulier de l'artillerie.**Etat-major particulier du génie.*

MAISON DE L'EMPEREUR.

Escadron des cents-gardes à cheval.

GARDE IMPERIALE.

Infanterie—

7 régiments (dont 3 de grenadiers et 4 de voltigeurs) à 4 bataillons de 6 compagnies.

1 régiment de zouaves à 2 bataillons de 7 compagnies.

1 bataillon de chasseurs à pied de 10 compagnies.

Cavalerie—

6 régiments (dont 2 de cuirassiers, 1 de dragons, 1 de lanciers, 1 de guides et 1 de chasseurs) à 6 escadrons.

Gendarmerie—

1 régiment à pied à 2 bataillons de 8 compagnies.

1 escadron pour la surveillance des forêts.

(III.)—*Décomposition de l'Effectif—Contd.*GARDE IMPERIALE—*Contd.**Artillerie—*

- 1 division d'artillerie à pied de 2 batteries.
- 1 régiment d'artillerie monté de 8 batteries.
- 1 „ à cheval de 6 batteries.
- 1 escadron de train de 2 compagnies.

Génie—

- 1 division de 2 compagnies.

Equipages Militaires—

- 1 escadron de 4 compagnies.

GENDARMERIE.

26 légions ou 92 compagnies départementales.

1 compagnie de gendarmes vétérans.

TROUPES.

Infanterie—

- 94 régiments de ligne à 3 bataillons de 6 compagnies et un dépôt de 6 compagnies.
- Dépôt des 6 régiments de ligne employes en Algerie
- 20 bataillons de chasseurs a pied a 8 compagnies.

Cavalerie—

- 49 régiments à 6 escadrons dont 2 de carabiniers.
- 10 de cuirassiers, 12 de dragons, 8 de lanciers.
- 11 de chasseurs et 6 de hussards.
- Ecole de cavalerie.
- Dépôts de remonte, vétérinaires et cavaliers de remonte (6 compagnies).

Artillerie—

- 18 régiments (3 batteries à cheval, 100 montées, 64 à pied).
- 1 régiment de pontonniers (10 compagnies).
- 5 escadrons du train à 5 compagnies.
- 10 compagnies d'ouvriers.

Génie—

- 3 régiments à 2 bataillons (42 compagnies).
- 1 compagnie d'ouvriers.

Equipages Militaires—

- Parcs de construction.
- 2 escadrons du train (10 compagnies actives et 2 cadres de dépôt).
- 3 compagnies d'ouvriers.

Vétérans de l'Armée—

- 1 compagnie de sous-officiers.
- 4 compagnies de canonniers.

(IV.)—Comparison of the Five Sections.—Ministère de la Guerre. Budget Général des Dépenses Ordinaires de l'Exercice 1864.

Section.	Nature des Services.	Crédits Demandés		
		Pour Dépenses formant les Charges de l'Etat.	Pour Dépenses d'Ordre.	Total.
		fr.	fr.	fr.
1	Administration centrale ; dépôt general de la guerre	2,604,538	—	2,604,538
2	Etats-majors ; gendarmerie ...	47,520,086	1,769,932	49,290,018
3	Solde et entretien des troupes	284,897,645	163,794	285,061,439
4	Matériel de l'artillerie et du génie, et service des poudres et salpêtres	25,882,189	886,821	26,769,010
5	Ecoles militaires ; invalides de la guerre ; traitements temporaires et secours ; dé- penses secrètes	7,559,035	—	7,559,035
	Total	368,463,493	2,820,547	371,284,040
	Dotation de l'armée, section unique	—	—	60,740,000
	Crédit éventuel pour inscrip- tion de pension militaire en 1864.....	—	—	2,600,000

Comparaison par Chapitre des Crédits Demandés pour 1864 avec les Crédits accordés pour 1863.

Effectif servant de base aux Dépenses relatives à l'Entretien des Troupes.

	Effectif.					
	Hommes.			Chevaux.		
	Intérieur.	Algérie.	Total.	Intérieur.	Algérie.	Total.
Allocations pour 1863	334,310	65,690	400,000	69,809	15,896	85,705
Provisions de 1864.....	345,000	55,000	400,000	69,809	15,896	85,705
Différence { en plus ... { en moins	10,690	—	—	—	—	—
	—	10,690	—	—	—	—

	Dépenses.		
	Intérieur.	Algérie.	Total.
	fr.	fr.	fr.
Allocations pour 1863	307,432,099	59,188,268	366,620,367
Provisions de 1864.....	316,347,138	54,936,902	371,284,040
Différence { en plus ... { en moins	8,915,039	—	4,663,673
	—	4,251,366	—

(V.)—*Table Détaillée des Matières.*

Section.	Chapitre.	
1	{	1 Administration centrale (personnel).
		2 " (matériel).
		{ Dépôt général de la guerre. Récapitulation de la 1 ^{re} section.
2	{	4 Etats-majors.
		{ Gendarmerie impériale Récapitulation de la 2 ^e section.
3	{	6 { 1 ^{re} p. Solde et abonnements payables comme la solde. 2 ^e " Vivres, chauffage et fourrages. 3 ^e " Hôpitaux militaires. 4 ^e " Service de marche. Récapitulation du chapitre 6.
		7 Habillement et campement.
		8 Lits militaires.
		9 Transports généraux.
		10 Recrutement et réserve.
		11 Justice militaire.
		12 Remonte générale.
		13 Harnachement.
		14 { Corps indigènes en Algérie. Récapitulation de la 3 ^e section.
		4	{	15 Etablissements et matériel de l'artillerie.
16 " du génie.		
17 Poudres et salpêtres (personnel).		
{ " (matériel). Récapitulation de la 4 ^e section.		
5	{	19 Ecoles impériales militaire.
		20 Invalides de la guerre.
		21 Solde de non-activité et solde de réforme.
		22 Secours.
		23 Dépenses temporaires.
		{ " secrètes. Récapitulation de la 5 ^e section. " générale.
ANNEXES.		
Budget de la dotation de l'armée ; etat des fonctionnaires et employés logés dans les bâtiments de l'Etat.		

(VI.)—Récapitulation Générale.

Sections.	Chapitres.	Nature des Services.	Crédits Demandés pour 1864.				Total.
			Intérieur.	Algérie.			
				Troupes Françaises.	Corps Etranger.	Dépenses Générales.	
			fr.	fr.	fr.	fr.	fr.
1	I.	{ Administration centrale (personnel)	1,910,538	—	—	—	1,910,538
	II.	{ Administration centrale (matériel)	549,500	—	—	—	549,500
	III.	{ Dépôt général de la guerre	135,400	—	—	9,100	144,500
2	IV.	Etats-majors	18,887,826	2,392,472	—	—	21,280,298
	V.	{ Gendarmerie impériale	27,060,186	949,534	—	—	28,009,720
3	VI.	{ Solde et prestations en nature	204,407,206	32,140,731	1,149,289	—	237,697,226
	VII.	{ Habillement et campement	18,113,694	2,891,922	171,575	—	21,177,191
	VIII.	Lits militaires	5,557,345	985,415	34,201	—	6,576,961
	IX.	Transports généraux	1,855,244	632,300	5,306	—	2,492,850
	X.	{ Recrutement et réserve	689,479	—	—	—	689,479
	XI.	Justice militaire	852,810	404,932	3,245	—	1,260,987
	XII.	Remonte générale ...	4,441,350	987,900	—	—	5,429,250
	XIII.	Harnachement	659,578	104,507	—	—	764,085
	XIV.	{ Corps indigènes en Algérie	—	—	8,973,410	—	8,973,410
	XV.	{ Etablissements et matériel de l'artillerie	6,974,592	170,878	10,000	270,185	7,425,655
4	XVI.	{ Etablissements et matériel du génie	8,351,890	—	—	2,600,000	10,951,890
	XVII.	{ Poudres et salpêtres (personnel)	882,482	—	—	—	882,482
	XVIII.	{ Poudres et salpêtres (matériel)	7,508,983	—	—	—	7,508,983
	XIX.	{ Ecoles impériale militaires	3,004,033	—	—	—	3,004,033
5	XX.	{ Invalides de la guerre	2,179,002	—	—	—	2,179,002
	XXI.	{ Solde de non-activité et solde de réforme	503,000	—	—	—	503,000
	XXII.	Secours (gratuity) ...	1,733,000	—	—	—	1,733,000
	XXIII.	{ Dépenses temporaires	90,000	—	—	—	90,000
	XXIV.	Dépenses secrètes	—	—	—	50,000	50,000
	XXV.	{ Dépenses des exercices clos et périmés	—	—	—	—	—
		Total général	316,347,138	41,660,591	10,347,026	2,929,285	371,284,040
Unique	—	Donation de l'armée	—	54,936,902			60,740,000

(VII.)—*Récapitulation de la Part 1, Section 3, Chapitre 6.*

Paye.	Effectif.			
	Intérieur.		Algérie.	Total.
	Garde Impériale.	Troupes de Ligne.		
Art. 1. Infanterie	17,784	199,992	26,247	244,023
„ 2. Cavalerie	6,504	45,609	7,566	59,679
„ 3. Artillerie	2,985	30,831	4,057	37,873
„ 4. Génie	341	5,459	1,509	7,309
„ 5. Equipages } militaires }	933	2,348	2,374	5,655
„ 6. Vétérans.....	—	648	—	648
Totaux	28,547	284,887	41,753	355,187

Paye.	Intérieur.	Algérie.		Total des Crédits Demandés pour 1864.	Crédits Alloués pour 1863.
		Troupes Françaises.	Corps Etranger.		
	fr.	fr.	fr.	fr.	fr.
Art. 1. Infanterie	80,901,071	8,954,124	773,974	90,629,169	88,972,266
„ 2. Cavalerie	27,312,602	3,664,081	—	30,976,683	30,535,188
„ 3. Artillerie	17,473,365	1,852,652	—	19,326,017	20,411,058
„ 4. Génie	2,705,187	601,579	—	3,306,766	3,024,687
„ 5. Equipages } militaires }	1,881,757	1,445,372	—	3,327,129	3,263,504
„ 6. Vétérans.....	235,736	—	—	235,736	232,634
Totaux.....	130,509,718	16,517,808	773,974	147,801,500	146,439,337
		17,291,782			

(VII A.)—*Section 3, Chapitre 3, Part 1—Solde des Troupes.*

Nature des Dépenses.	Crédits Demandés pour l'Exercice 1864.			
	Divisions Territoriales de l'Intérieur.	Algérie.		Total.
		Troupes Françaises.	Corps Etranger.	
	fr.	fr.	fr.	fr.
SECTION 2.				
<i>Abonnements et Indemnités.</i>				
MASSE GENERALE D'ENTRETIEN.				
<i>Garde Impériale.</i>				
1 régiment de zouaves à 11,200	11,200	—	—	206,400
7 régiments d'infanterie à 27,000 } par corps	189,000			
1 bataillon de chasseurs à 6,200	6,200			
<i>Troupes de Ligne.</i>				
101 régiments d'infanterie (y compris le } régiment étranger) à 13,000	1,240,000	60,000	13,000	1,313,000
20 bataillons de chasseurs à pied (à 4,300 frs.)	86,000	—	—	86,000
3 régiments de zouaves à 7,550 frs. l'un	—	22,650	—	22,650
3 bataillons d'infanterie légère d'Afrique } à 2,900 frs.	—	8,700	—	8,700
7 compagnies de discipline à 300 frs.	—	2,100	—	2,100
A reporter	1,532,400	93,450	13,000	1,638,850

(VIII.)—*Dépenses.*—Section 1, Chapitre 1—*Administration Centrale (Personnel).*

Nature des Dépenses.	Crédits		Différences au Budget de 1864.	
	Demandés pour l'Exercice 1864.	Alloués pour l'Exercice 1863.	En Plus.	En Moins.
	fr.	fr.	fr.	fr.
SECTION 1.				
<i>Administration Centrale. Dépôt Général de la Guerre.</i>				
Chapitre 1.				
<i>Administration Centrale (Personnel).</i>				
ARTICLE 1.				
<i>Traitement du Ministre.</i>				
Traitement du ministre	130,000	130,000	—	—
ARTICLE 2.				
<i>Appointement des Chefs et Commis. Appointements des Directeurs, des Chefs et des Commis des divers Services, ensemble 479 personnes, savoir :—</i>				
7 directeurs de 18,000 à 25,000 frs.	479 1,646,998	—	—	—
1 chef de cabinet du ministre à 12,000 frs.				
4 directeurs-adjoints et sous-directeurs à 10,000 frs.				
25 chefs de bureaux de 7,000 à 9,000 frs.				
28 sous-chefs de 5,000 à 6,000 frs.				
25 chefs de section à 4,000 frs.				
382 commis principaux et ordinaires de toutes classes, dessinateurs et graveurs de 18,000 à 36,000 frs.				
2 traducteurs de 2,400 à 4,000 frs.				
1 agent comptable à 6,000 frs.				
1 conservateur de mobilier à 5,000 frs.				
2 élèves dessinateurs ou graveurs à 600 frs.				
1 inspecteur des travaux de bâtiment à 1,000 frs.				
A déduire : Pour incomplets présumés, compensation faite des allocations nécessaires, pour travaux extraordinaires, indemnités des employés auxiliaires, indemnités de licenciement &c.	3,000	—	—	—
Reste pour l'Article 2	1,649,998	1,474,118	169,870	—
ARTICLE 3.				
<i>Salaires des Agents Secondaires.</i>				
Huissiers, concierges, garçons de bureaux et hommes de pied à l'armée, pour les divers services du ministre	136,550	136,550	—	—
Total du Chapitre 1	1,916,548	1,740,668	169,870	—

(IX.)—*Suite de la Section 3, Chapitre 6, Partie 2—Vivres, Chauffage et Fourrages.*

Nature des Dépenses.	Intérieur.	Algérie.	Total.
SUITE DE L'ARTICLE 2—(Vivres). <i>Evaluation de la Dépense.</i> Effectif ayant droit aux Distributions : 348,207 hommes (comme d'autre part).	Rations.	Rations.	Rations.
SECTION 1.— <i>Vivres Pain.</i> * Rations de pain, à 20 c. dans l'intérieur et en Algérie	100,848,554	15,975,861	116,824,415
SECTION 2.— <i>Vivres de Campagne.</i> Rations mixtes de sucre et café, à 7 c. l'une	—	10,650,547	10,650,547
SECTION 3.— <i>Liquides.</i> Rations de vin de 25 centilitres, à 4 c. 50 m. l'une	—	5,925,287	5,925,287

* Rations for $\frac{1}{25}$ th of strength, supposed to be in hospital, not included.

(IX.)—*Suite de la Section 3, Chapitre 6, Partie 2—Contd.*

Nature des Dépenses.	Crédits Demandés pour l'Exercice 1864.			
	Divisions Territoriales de l'Intérieur.	Algérie.		Total.
		Troupes Françaises.	Corps Etranger.	
SUITE DE L'ARTICLE 2—(Vivres). <i>Evaluation de la Depense.</i>	fr.	fr.	fr.	fr.
Effectif ayant droit aux Distributions : 348,207 hommes (comme d'autre part).				
SECTION 1.— <i>Vivres Pain.</i>				
Rations de pain, à 20 c. dans l'intérieur et en Algérie, savoir :—				
Garde impériale, 9,066,735 rations	1,813,347	—	—	1,813,347
Troupes de ligne, 107,757,680 „	18,356,364	3,060,109	135,063	21,551,536
Total de Section 1	20,169,711	3,060,109	135,063	23,364,883
SECTION 2.— <i>Vivres de Campagne.</i>				
Achat de riz, legumes secs, viande et sel pour les troupes tenant garrison dans les îles et forts en mer, et pour les ateliers de condamnés dans l'intérieur	30,000	—	—	30,000
Dépenses extraordinaires pour les camps d'instruction	407,000	—	—	407,000
Rations mixtes de sucre et café, à 7 c. l'une	—	714,025	31,515	745,540
Total de Section 2	437,000	714,025	31,515	1,182,540
SECTION 3.— <i>Liquides.</i>				
Rations de vin de 25 centilitres, à } 4 c. 50 m. l'une	—	256,508	10,130	266,638
Fourniture et transport l'eau douce, tant pour le service des troupes casernées à Paris, Vincennes, Cour- bevoie, Saint-Denis, Rouen, Longwy &c. que pour les garnisons des îles Tatihou, Saint-Marcouf et du fort La Hogue	55,000	—	—	55,000
Total de Section 3.....	55,000	256,508	10,130	321,638
SECTION 4.— <i>Approvisionnements de Siège.</i>				
Renouvellement entretien en conserva- tion des deuréés composant les appro- visionnements des îles et forts en mer }	15,000	—	—	15,000
SECT. 5.— <i>Deuxième Portion du Contingent.</i>				
4,645,890 rations de pain, à 20 c. l'une	989,178	—	—	989,178
Total de l'Article 2	21,665,889	4,030,642	176,708	25,873,239
Report au chapitre 9 (transports géné- raux), des frais de transport de vivres }	200,000	—	—	200,000
Reste pour 1864	21,465,889	4,207,350		25,673,239
Credit alloué pour 1863	—	—	—	25,539,421
Augmentation pour 1864	—	—	—	133,818

(X.)—*Suite de la Section 3, Chapitre 6, Partie 2—Vivres, Chauffage et Fourrages.*

Nature des Dépenses.	Intérieur.		Algérie.	Total.
	Garde Impériale.	Troupes.		
ARTICLE 4.— <i>Fourrages.</i>	Chevaux.	Chevaux.	Chevaux.	Chevaux.
Le nombre des chevaux compris dans l'effectif est de	8,127	61,682	15,896	85,705
A déduire—				
Les chevaux des cent-gardes à cheval	179	—	—	3,721
„ corps indigènes	—	—	3,542	
dont les frais de nourriture sont compris au chapitre 14	—	—	—	
Reste	7,948	61,682	12,354	81,984
A quoi il convient d'ajouter, par approximation, 1,500 chevaux d'officiers généraux, supérieurs et autres, autorisés à percevoir les rations en nature au lieu de l'indemnité de fourrages que leur est attribuée par les tarifs de la solde	—	1,500	—	1,500
Total	7,948	63,182	12,354	83,484
	71,130			
Lesquels, à nourrir pendant 366 jours, porteront le nombre des journées de nourriture ou des rations journalières à distribuer à	Rations.	Rations.	Rations.	Rations.
	2,908,968	23,124,612	4,521,564	30,555,144
	26,033,580			

Nature des Dépenses.	Crédits Demandés pour l'Exercice 1864.			
	Divisions Territoriales de l'Intérieur.	Algérie.		Total.
		Troupes Françaises.	Corps Etranger.	
Ces 30,555,144 rations, décomptées au prix de 1 fr. 25 c. la ration pour l'intérieur et pour l'Algérie, occasionneront la dépense ci-après, savoir :	fr.	fr.	fr.	fr.
Garde impériale	3,636,210	—	—	3,636,210
Troupes de ligne	28,905,765	5,625,878	26,077	34,557,720
Frais de nourriture des reproducteurs entretiens dans les dépôts et stations en Algérie	—	42,910	—	42,910
Supplément de ration aux chevaux de remonte, pendant la route des lieux d'achats aux dépôts de remonte et de ces dépôts aux corps, et aux chevaux des camps d'instruction	88,000	20,567	—	108,567
Garde de Paris ; 663 chevaux, pendant 366 jours, consommeront 242,658 rations, lesquelles, au prix du 1 fr. 35 c. l'une, coûteront	327,588	—	—	327,588
Total de l'Article 4	32,957,563	5,689,355	26,077	38,672,995
A déduire : Pour frais de transport mis à la charge du chapitre 9 (Transports généraux)	50,000	—	—	50,000
Reste pour 1864	32,907,563	5,715,432		38,622,995
Crédit alloué pour 1863	—	—		38,450,033
Augmentation pour 1864	—	—		172,962

Récapitulation de la Partie 2.

	Crédits Demandés pour 1864.			
	Intérieur.	Algérie.		Total.
	fr.	fr.	fr.	fr.
Art. 1. Personnel	1,084,087	578,155	—	1,662,242
„ 2. Vivres.....	21,465,889	4,030,642	176,708	25,673,239
„ 3. Chauffage et éclairage }	2,358,992	434,438	20,234	2,813,664
„ 4. Fourrages	32,907,563	5,689,355	26,077	38,622,995
Total de la partie 2	57,816,531	10,732,590	223,019	68,772,140
		10,955,609		

	Allocations de 1863.	Différences à 1863.	
		En Plus.	En Moins.
	fr.	fr.	fr.
Art. 1. Personnel	1,631,355	30,887	—
„ 2. Vivres.....	25,539,421	133,818	—
„ 3. Chauffage et éclairage }	2,822,557	—	8,893
„ 4. Fourrages	38,450,033	172,962	—
Total de la partie 2	68,443,366	337,667	8,893
		En plus 328,774	

(XI.)—*Suite de la Section 3, Chapitre 6, Partie 3—Vivres, Chauffage et Fourrages.*

Nature des Dépenses.	Intérieur.	Algérie.	Total.
	No.	No.	No.
ARTICLE 3.—Chauffage et éclairage.			
SEC. 1.— <i>Chauffage des Troupes.</i>			
GARDE IMPERIALE.			
<i>Troupes faisant usage de Fourneaux Economiques.</i>			
Rations de sous-officiers, pour 366 jours	860,723	—	860,723
Rations collectives de l'ordinaire, pour 366 jours....	131,028	—	131,028
Idem de chauffage des chambres, pour 134 jours } d'hiver	62,676	—	62,676
TROUPES DE LIGNE.			
<i>Troupes faisant usage de Fourneaux Economiques.</i>			
Rations de sous-officiers	8,897,508	1,176,974	10,074,482
Rations collectives de l'ordinaire	1,384,744	162,000	1,546,744
Idem de chauffage des chambres, pour 134 jours } d'hiver.....	648,049	2,000	650,049
<i>Troupes ne faisant pas usage de Fourneaux Economiques.</i>			
Rations individuelles de l'ordinaire	1,782,377	5,665,548	7,447,925
Idem de chauffage des chambres	701,447	—	701,447
Distribution extraordinaire de combustibles pour } les camps d'instruction	—	—	—
SECTION 2.			
<i>Chauffage et Eclairage des Corps de Garde.</i>			
1,400 corps de garde dans l'intérieur, pendant 221 jours :—			
Journées de chauffage	295,400	—	295,400
„ d'éclairage	512,400	—	512,400
360 corps de garde en Algérie, pendant 121 jours :—			
Journées de chauffage	—	43,560	43,560
„ d'éclairage	—	131,760	131,760

(XI.)—Suite de la Section 3, Chapitre 6, Partie 3.—Chauffage—Contd.

Nature des Dépenses.	Crédits Demandés pour l'Exercice 1864.			
	Divisions Territoriales de l'Intérieur.	Algérie.		Total.
		Troupes Françaises.	Corps Etranger.	
	fr.	fr.	fr.	fr.
ARTICLE 3.—Chauffage et éclairage.				
SEC. 1.—Chauffage des Troupes.				
GARDE IMPERIALE.				
<i>Troupes faisant usage de Fourneaux Economiques.</i>				
Rations de sous-officiers, à 4 c. la ration, pour 366 jours	34,429	—	—	34,429
Rations collectives de l'ordinaire, à 50 c. la ration, pour 366 jours	65,514	—	—	65,514
Idem de chauffage des chambres, pour 134 jours d'hiver, à 65 c. idem	40,739	—	—	40,739
	140,682	—	—	140,682
TROUPES DE LIGNE.				
<i>Troupes faisant usage de Fourneaux Economiques.</i>				
Rations de sous-officiers, à 4 c. la ration à l'intérieur et 6 c. en Algérie	355,900	67,028	3,590	426,518
Rations collectives de l'ordinaire, à 50 c. la ration à l'intérieur et 80 c. en Algérie.....	692,372	128,000	1,600	821,972
Idem de chauffage des chambres, pour 134 jours d'hiver, à 65 c. la ration pour l'intérieur et à 70 c. pour l'Algérie.....	421,232	1,400	—	422,632
	1,469,504	196,428	5,190	1,671,122
<i>Troupes ne faisant pas usage de Fourneaux Economiques.</i>				
Rations individuelles de l'ordinaire, à 2 c. à l'inté- rieur et 3 c. en Algérie	35,647	154,992	15,044	205,683
Idem de chauffage des chambres, à 2 c. l'une à l'intérieur	14,029	—	—	14,029
Distribution extraordinaire de combustibles pour les camps d'instruction	60,000	—	—	60,000
Total de Section 1	1,719,862	351,420	20,234	2,091,516
SECTION 2.				
<i>Chauffage et Eclairage des Corps de Garde.</i>				
1,400 corps de garde dans l'intérieur, pendant 221 jours :— fr.				
Journées de chauffage, à 95 c. l'une.... 280,630	} 408,730	—	—	408,730
„ d'éclairage, à 25 c. l'une..... 128,100				
360 corps de garde en Algérie, pendant 121 jours :—				
Journées de chauffage, à 1 fr. l'une 43,560	} —	83,088	—	83,088
„ d'éclairage, à 30 c. l'une..... 39,528				
Total de Section 2	408,730	83,088	—	491,818

(XI.)—Suite de la Section 3, Chapitre 6, Partie 3.—Chauffage—Contd.

Nature des Dépenses.	Crédits Demandés pour l'Exercice 1864.			
	Divisions Territoriales de l'Intérieur.	Algérie.		Total.
		Troupes Françaises.	Corps Etranger.	
	fr.	fr.	fr.	fr.
SECTION 3.				
<i>Eclairage des Casernes et Bâtiments Militaires de Paris et Arrondissement.</i>				
Entretien, dans les bâtiments militaires, } de 950 becs de lumière (éclairage au } gaz) }	fr. 82,000	105,000	—	105,000
dem de 450 becs de lumière (éclairage } à l'huile)..... }	23,000			
SEC. 4.— <i>Dépenses Accessoires.</i>				
Frais de transport de combustibles pour les } troupes éloignées des magasins..... }	3,000	—	—	3,000
SEC. 5.— <i>Deuxième Portion du Contingent.</i>				
1,645,890 rations individuelles.....	122,400	—	—	122,400
Total de l'Article 3	2,358,992	434,508	20,234	2,813,734
		454,672		
Crédit alloué pour 1863	—	—	—	2,822,557
Diminution pour 1864	—	—	—	8,893

(XII.)—Suite de la Section 3, Chapitre 7—

NATURE DES

ART. 2—Matériel.—Sec. 1—Fourniture d'Effets

Désignation des Armes.	Effectif.				Dépense Moyenne par Homme.	
	Intérieur.		Algérie.			
	Sous- Officiers et Cadres.	Soldats.	Sous- Officiers et Cadres.	Soldats.	Sous- Officiers et Cadres.	Soldats.
<i>Garde Impériale—</i>					fr. c.	fr. c.
Grenadiers	1,560	4,722	—	—	72 72	63 18
Voltigeurs	2,080	6,296	—	—	58 86	52 30
Zouaves	322	1,008	—	—	56 1	54 63
Chasseurs à pied	253	700	—	—	65 5	58 41
Cuirassiers	614	1,324	—	—	100 53	93 23
Dragons	307	662	—	—	89 26	81 92
Lanciers	307	662	—	—	86 82	75 27
Guides	307	662	—	—	105 14	102 76
Chasseurs	307	662	—	—	86 22	83 24
Division d'artillerie à pied	56	184	—	—	63 7	64 45
Regiment „ monté	442	912	—	—	86 13	76 70
„ „ à cheval	357	708	—	—	89 29	88 56
Escadron du train d'artillerie	52	148	—	—	87 89	88 56
Division du génie	82	220	—	—	85 46	85 13
Escadron du train des équipages	269	620	—	—	90 67	91 45
Total de la garde impériale	7,315	19,490	—	—	—	—
<i>Infanterie—</i>						
Infanterie de ligne	50,572	119,139	3,092	16,391	48 90	40 50
Chasseurs à pied	4,277	8,024	606	2,400	45 48	40 69
Infanterie légère d'Afrique	—	—	429	1,230	45 58	39 52
Compagnies de discipline	—	—	175	686	41 26	27 15
Régiments étrangers	—	—	516	2,061	44 24	38 50
Total de l'infanterie	54,849	127,163	4,818	22,768	—	—
<i>Cavalerie—</i>						
De reserve { Caribiniers	488	1,140	—	—	76 —	54 38
{ Cuirassiers	2,440	5,700	—	—	73 90	55 87
De ligne { Dragons	2,928	6,840	—	—	65 72	50 41
{ Lanciers	1,952	4,560	—	—	66 3	51 60
Legère..... { Chasseurs	2,196	5,130	1,373	2,279	63 38	51 33
{ Hussards	1,952	4,560	—	—	65 13	51 67
Ecole impériale de cavalerie	112	95	—	—	63 38	48 75
Cavaliers de remonte	448	1,627	192	591	58 59	49 —
Chasseurs d'Afrique	—	—	1,373	2,279	80 5	50 65
Total de la cavalerie	12,516	29,652	2,938	5,149	—	—
<i>Artillerie—</i>						
Régiments	8,830	16,884	537	1,232	60 45	50 83
Pontoniers	358	720	56	208	51 48	46 15
Escadron du train d'artillerie	821	1,050	271	1,200	69 10	58 54
Compagnies d'ouvriers	280	420	112	284	62 49	51 60
Total de l'artillerie	10,289	19,074	976	2,924	—	—

Billement et Campement.

ENSES.				Crédits Demandés pour l'Exercice 1864.							
Abonnement aux Corps de Troupes.											
Dépense Totale.											
Intérieur.		Algérie.		Divisions Territoriales de l'Intérieur.	Algérie.		Total.				
Sous-Officiers et Cadres.	Soldats.	Sous- Officiers et Cadres.	Soldats.		Troupes Françaises.	Corps Etranger.					
fr.	fr.	fr.	fr.	fr.	fr.	fr.	fr.				
113,443	298,336	—	—	1,863,331	—	—	1,863,331				
128,429	327,281	—	—								
18,035	55,067	—	—								
16,458	40,887	—	—								
61,725	123,437	—	—								
25,149	54,231	—	—								
26,654	49,829	—	—								
32,278	68,027	—	—								
26,470	55,105	—	—								
3,532	11,859	—	—								
38,069	69,950	—	—								
31,877	62,700	—	—								
4,570	13,107	—	—								
7,008	18,729	—	—								
24,390	56,699	—	—								
558,087	1,305,244	—	—								
2,472,970	4,825,129	151,198	663,835					7,816,838	1,034,655	102,157	8,953,668
192,243	326,496	27,560	98,056								
—	—	19,553	48,609								
—	—	7,220	18,624								
—	—	22,827	79,348								
2,665,213	5,151,625	228,358	908,472	7,816,838	1,034,655	102,157	8,953,668				
37,088	61,893	—	—	2,377,156	469,548	—	2,846,704				
180,316	318,459	—	—								
192,418	344,804	—	—								
128,890	235,296	—	—								
139,222	263,322	87,080	116,981								
127,133	230,615	—	—								
7,098	4,631	—	—								
26,248	79,723	11,249	28,959								
—	—	109,908	115,431								
838,413	1,538,743	208,237	261,371								
533,773	858,213	32,461	62,622					1,601,110	218,190	—	1,819,300
18,529	33,228	2,882	9,599								
56,731	61,467	18,726	70,248								
17,497	21,672	6,998	14,654								
626,530	974,580	61,067	157,123								

(XII.)—Suite de la Section 3, Chapitre 7—

NATURE DES

ART. 2—Matériel.—Sec. 1—Fourniture d'Effets

Désignation des Armes.	Effectif.				Dépense Moyenne par Homme.	
	Intérieur.		Algérie.			
	Sous- Officiers et Cadres.	Soldats.	Sous- Officiers et Cadres.	Soldats.	Sous- Officiers et Cadres.	Soldats.
					fr. c.	fr. c.
<i>Génie—</i>						
Régiments	1,102	2,220	382	1,167	51 29	48 90
Compagnies d'ouvriers	30	68	40	195	49 38	48 90
Total du génie	1,132	2,288	422	1,362	—	—
<i>Train des Equipages—</i>						
Parcs de construction—escadrons ...	561	1,100	834	1,212	61 55	47 81
Compagnies d'ouvriers	84	204	28	155	43 38	43 89
Total des équipages militaires...	645	1,304	862	1,367	—	—
<i>Vétérans—</i>						
Sous-officiers	16	97	—	—	43 60	43 67
Canonniers	128	388	—	—	46 23	39 85
Total des vétérans	144	485	—	—	—	—
<i>Services Administratifs—</i>						
Infirmiers militaires	463	1,736	220	1,010	43 32	42 95
Ouvriers d'administration.....	329	2,326	168	492	52 —	36 19
Total des services administratifs	792	4,062	388	1,502	—	—
	87,682	203,518	10,404	35,072		
Totaux généraux	291,150		45,476			
A déduire : Pour prélèvement sur les } approvisionnements	—		—		—	—

Note.—Crédits alloués pour l'exercice 1863, 15,257,700 frs.

Aliment et Campement—Contd.

EXPENSES.				Crédits Demandés pour l'Exercice 1864.			
Alimentation aux Corps de Troupes.							
Dépense Totale.				Divisions Territoriales de l'Intérieur.	Algérie.		Total.
Intérieur.		Algérie.			Troupes Françaises.	Corps Etranger.	
Officiers et Cadres.	Soldats.	Sous- Officiers et Cadres.	Soldats.				
fr.	fr.	fr.	fr.	fr.	fr.	fr.	fr.
56,521 1,467	107,558 3,325	19,592 1,975	56,966 9,535				
57,988	110,883	21,567	66,501	168,871	88,068	—	256,939
34,529 3,643	52,591 8,953	51,332 1,214	57,368 6,802				
38,172	61,544	52,546	64,170	99,716	116,716	—	216,432
697 5,580	4,325 15,461	— —	— —				
6,277	19,786	—	—	25,973	—	—	25,973
20,057 17,108	74,561 84,177	9,350 8,736	43,379 17,805				
37,165	158,738	18,086	61,184	195,903	79,450	—	275,353
27,845	9,321,143	589,861	1,518,821	14,148,898	2,006,627	102,157	16,257,700
14,148,898		2,108,802					
—		—		100,000	—	—	100,000
				14,048,898	2,006,627	102,175	16,157,700

ences au budget de 1864, en plus 900,000 frs.

(XIII.)—*Suite de la Section 3, Chapitre 8—Lits Militaires.*

Quantités de Mobiliers Entretenus ou Occupés.		Nature des Dépenses.	Prix de Location ou de Conservation par An.	
Intérieur.	Algérie.		Intérieur.	Algérie.
			fr. c.	fr. c.
CHAPITRE 8.— <i>Lits Militaires.</i>				
ARTICLE 1.				
<i>Dépenses de Location et de Conservation.</i>				
GARDE IMPERIALE.				
SECTION 1.— <i>Loyer d'Entretien.</i>				
28,079	—	Fournitures complètes de soldat	6 74	—
841	—	„ d'infirmérie	7 3	—
420	—	Demi-fournitures	6 14	—
500	—	Capotes de sentinelle	6 17	—
SECTION 2.— <i>Loyer d'Occupation.</i>				
26,742	—	Fournitures complètes de soldat	7 73	—
—	—	„ d'infirmérie	10 41	—
—	—	Demi-fournitures	8 52	—
SECTION 3.— <i>Abonnement de Conservation et d'Entretien.</i>				
9,640	—	Couchettes en fer de soldat	— 19	—
19,280	—	Châlits à tréteaux en fer	— 148	—
TROUPES DE LIGNE.				
SECTION 1.— <i>Loyer d'Entretien.</i>				
1,450	2	{ Fournitures d'officier et d'employé } militaire, à	14 28	19 85
1,100	2	Ameublements d'officier	27 62	29 81
1,540	—	{ „ d'employé et d'adjudant } sous-officier	7 95	—
276,921	61,550	Fournitures complètes de soldat	6 74	7 1
—	3,180	„ de hamacs pour soldat	—	3 11
7,759	1,645	„ d'infirmérie	7 03	7 48
4,823	1,851	{ Demi-fournitures de salle de police } et prison	6 14	6 16
4,700	1,212	Capotes de sentinelle	6 17	5 35
SECTION 2.— <i>Loyer d'Occupation.</i>				
1,050	2	{ Fournitures d'officier et d'employé } militaire, à	11 48	14 30
746	2	Ameublements d'officier	22 64	28 40
1,450	—	{ „ d'employé militaire et } d'adjudant sous-officier	6 44	—
267,000	48,000	Fournitures complètes de soldat	7 73	7 56
—	3,020	„ de hamacs pour soldat	—	8 5
7,695	1,645	„ d'infirmérie	10 41	10 34
3,847	1,440	{ Demi-fournitures de salle de police } et prison	8 52	4 14
55	19	Mobiliers de corps de garde d'officier ..	13 45	18 88
1,236	329	„ „ de soldat	15 71	17 29
SECTION 3.— <i>Abonnement de Conserva- tion et d'Entretien.</i>				
1,569	—	Couchettes en fer d'officier, à	— 25	—
60,728	—	„ „ de soldat	— 19	—
195,442	63,647	Châlits à tréteaux en fer	— 148	— 24
71,165	—	„ „ en bois	— 114	—
SECTION 4.— <i>Service Supplétif de Couchage.—Loyer d'Entretien.</i>				
32,650	—	Demi-fournitures auxiliaires	5 14	—
—	—	<i>Loyer d'Occupation.</i> Demi-fournitures auxiliaires	7 52	—

(XIII.)—*Lits Militaires—Contd.*SECTION 5.—*Deuxième Portion de Contingent.*

Frais de Couchage et Entretien du Mobilier.

ARTICLE 2.—*Dépenses Accessoires.*SECTION 1.—*Loyers de Magasin et Logement chez l'Habitant.*

Loyers de magasins, à défaut d'emplacement dans les bâtiments militaires.

Pertes et dégradations à la charge de l'Etat, frais d'expertise, de transport et autres dépenses accidentelles.

Indemnité aux habitants pour logement fourni aux troupes, à défaut d'emplacement ou de lits militaires.

Fourniture de couverture aux troupes bivouaquées, ou transportées par mer, en Algérie.

SECTION 2.—*Ameublement des Officiers Généraux et Mess.*

Frais d'entretien des ameublements existant dans les appartements de réception des hôtels occupés par des officiers généraux.

Frais d'entretien des ameublements garnissant les mess des officiers de la garde impériale.

Entretien de l'ameublement des hôtels des maréchaux de France pourvus de grands commandements.

(XIV.)—*Section 4, Chapitre 15, Article 2—Armes Portatives. Section 1—Armes Neuves.*

	Divisions Territoriales de l'Intérieur.	Algérie.	Total.	Crédits Alloués pour l'Exercice 1863.
	fr.	fr.	fr.	fr.
Fabrication d'armes neuves*	2,000,000	—	2,000,000	—
Encaissement des armes expé- diées sur les arseneaux	40,000	—	40,000	—
Achat de petits nécessaires d'armes, monte-ressorts et tire- balles (nouveau modèle)	20,000	—	20,000	—
A reporter—				
Total de sect. 1 de l'art. 2 ...	2,060,000	—	2,060,000	2,060,000
Total de l'article 1	1,772,519	230,185	2,002,704	2,002,704

* Détail des armes à fabriquer, en 1864, pour le compte du département de la guerre :—

32,000 fusils d'infanterie, modèle 1857 ;

2,000 fusils de dragon, idem ;

6,000 carabines ;

4,000 mousquetons d'artillerie ;

10,000 sabres-baïonnettes ;

1,000 sabres de cavalerie ;

1,200 cuirasses, modèle 1855.

Note.—Les commandes seront réparties entre les diverses manufactures dans la proportion assignée à chacune d'elles par leurs marchés respectifs.

La date et la durée de ces marchés sont indiquées ci-après, savoir :—

Manufacture de Saint Etienne.—Adjudication du 30 Novembre, 1838, pour vingt ans, à compter du 1er Janvier, 1839, prorogée au 31 Décembre, 1873.

Manufacture de Mutzig.—Traité du 14 Août, 1839, pour vingt ans, à partir du 1er Septembre, 1839, prorogé au 1er Novembre, 1869.

Manufacture de Châtellerault.—Adjudication du 15 Septembre, 1851, pour quinze ans, à compter du 1er Octobre, 1851 (armes à feu et armes blanches).

Manufacture de Tulle.—Adjudication du 1er Octobre, 1855, pour quinze ans, à compter du 1er Janvier, 1856.

(XV.)—Suite de la Section 4—

Nature des Dépenses.	Crédits.		Différences au Budget de 1863.	
	Démandes pour l'Exercice 1864.	Alloués pour l'Exercice 1863.	En Plus.	En Moins.
CHAP. 18.— <i>Poudres et Salpêtres (Matériel).</i> *	fr.	fr.	fr.	fr.
Article Unique.				
SECTION 1.				
<i>Matières d'Approvisionnements Principaux.</i>				
Achat de salpêtre brut	4,366,000	4,977,853		
„ soufre brut	196,125			
„ bois à charbon à poudre	415,738			
et frais accessoires				
SECTION 2.				
<i>Matières d'Approvisionnements Secondaires.</i>				
Achat de colle potasse merrains, cercles osiers, confection de barillages et caisses	932,965	1,842,849		
Achat de toiles sacs et draps de séchoir et de dortoir	178,825			
Achat de bois à brûler de charbon de terre et bourbe	118,552			
Achat et façon de cuivres, bois pièces de rechange planches et voliges	116,000			
Achat de boîtes pour le pliage des poudres de chasse, remplissage des boîtes et frais accessoires....	496,507			
SEC. 3.— <i>Ustensiles.</i>				
Achat confection et réparation d'ustensiles....	243,293			
SEC. 4.— <i>Frais Généraux d'Exploitation.</i>				
Achat d'huiles et de chandelles, vieux oing &c., abonnements divers, menus transports, service santé, curage de canaux, secours, indemnités &c.	144,938			
SEC. 5.— <i>Bâtiments et Usines.</i>				
Grosses réparations, améliorations, acquisitions et constructions	224,000	300,000		
Dépenses d'entretien &c., bâtiments et de machines immobilières; loyers rentes et contributions.....	76,000			
Total du chapitre 18	7,508,983	5,912,700	1,596,283†	
Récapitulation de la Section 4.				
Chap. 15. Etablissements et matériel de l'artillerie	7,425,655	7,477,288	—	51,633
„ 16. Etablissements et matériel du génie	10,951,890	10,951,890	—	—
„ 17. Poudres et salpêtres (personnel)....	882,482	769,144	113,338	—
„ 18. „ (matériel)	7,508,983	5,912,700	1,596,283	—
Total de la Section 4.....	26,769,010	25,111,022	1,709,621	51,633
			En plus 1,657,988	

OBSERVATIONS.

Nota.—Le prix de revient des poudres se compose des éléments ci-après, savoir :—				
Dépenses du personnel, chapitre 17.....	882,482			
„ matériel „ 18.....	7,508,983			
Total	8,391,464			

Cette somme, appliquée aux quantités de poudres à fabriquer, fait reportir le prix de revient ci-après par espèces, savoir :—

	Les 100 Kilogrammes Sert Poudre.		fr.	fr.
	fr.	c.		
Poudres—				
De guerre	à 146	52	774,000	1,134,064
Idem (ministère des finances)	à 134	73	15,000	20,209
De mine.....	à 110	2	5,204,000	5,725,440
„ commerce extérieur	à 122	10	150,000	183,150
„ chasse, fine, ministère de la guerre	à 154	2	5,000	7,701
„ „ „ des finances, ser- } vices de l'Algérie	à 246	46	309,500	762,793
„ chasse, superfine, idem	à 283	18	161,300	456,769
„ extra fine, „	à 286	27	35,400	101,339
Total	—		6,654,200	8,391,465

* Les prévisions de ce service sont établies d'après une fabrication de 6,654,200 kilogrammes de poudres de diverses espèces, à repartir ainsi qu'il soit entre les ministères consommateurs, savoir :—

	Ministère de la Guerre, Service de l'Artillerie.	Ministère de la Marine.		Ministère des Finances.	Services de l'Algérie.	Totaux.
		Service Marine.	Service Colonial.			
Poudres—	kil.	kil.	kil.	kil.	kil.	kil.
De guerre	600,000	150,000	24,000	15,000	—	789,000
„ mine.....	—	—	4,000	5,000,000	200,000	5,204,000
„ commerce extérieur	—	—	—	150,000	—	150,000
„ chasse, fine	5,000	1,000	—	260,000	48,500	314,500
„ „ superfine	—	—	—	160,000	1,300	161,300
„ „ extra fine.....	—	—	—	35,000	400	35,400
Totaux.....	605,000	151,000	28,000	5,620,000	250,200	6,654,200
Les évaluations de budget de } 1863 étaient basées sur une } commande de	605,000	167,000	28,100	4,000,000	168,000	4,968,100
	—	—	—	1,620,000	82,200	1,702,200
	—	16,000	100	—	—	16,100
Différence définitive en plus } pour 1864	—	—	—	—	1,686,100	

† Conséquence d'une commande de poudres beaucoup plus considérable que celle de 1863.

(XVII.)—Article 3—Fonderies.

Nature des Dépenses.

Valuer de 165,000 kilogrammes de bronze, à prélever sur les approvisionnements de l'artillerie pour la fonte des bouches à feu, à 2 frs. 60 c. le kilogramme	frs. 429,000
Valuer de 35,000 kilogrammes de métaux neufs, cuivre, zinc, étain, à acheter pour la fonte des bouches à feu, à 3 frs. le kilogramme	105,000
Façon de 465 bouches à feu de divers calibres et de menus objets en bronze d'un poids total de 200,000 kilogrammes	104,000
Total	638,000

(XVII A.)—Suite de la Section 3, Chapitre 12—Harnachement.

Nature des Dépenses.	Crédits Demandés pour l'Exercice 1864.		
	Divisions Territoriales de l'Intérieur.	Algérie.	Total.
CHAPITRE 12.—Harnachement.	fr.	fr.	fr.
ARTICLE 1.			
<i>Harnachement des Chevaux de la Cavalerie.</i>			
GARDE IMPERIALE.			
Selles complètes, 133 frs. 35 c. l'une.....	28,137	—	28,137
Schabraques en drap, 58 frs. 10 c. l'une	30,677	—	30,677
Couvertures, 29 frs. l'une	15,312	—	15,312
	74,126	—	74,126
TROUPES DE LIGNE.			
Selles complètes, 124 frs. 22 c. l'une.....	180,491	39,999	220,490
Schabraques en drap, 35 frs. 18 c. l'une	127,844	—	127,844
Couvertures, 18 frs. l'une	65,412	14,508	79,920
	447,873	54,507	502,380
Fonds de secours à la masse d'entretien du harnachement et ferrage, fournitures de manège, dépenses	30,000	10,000	40,000
Total de l'Article 1	477,873	64,507	542,380
ARTICLE 2.			
<i>Harnachement des Chevaux de l'Artillerie.</i>			
Entretien et réparation des effets en magasin, dans les arsenaux tant à l'intérieur qu'en Algérie.....	160,205	10,000	170,205
ART. 3.—Harnachement des Chevaux du Génie.			
Entretien des effets en magasin et remplacement de ceux qui atteindront en 1864 le tenu de leur durée	1,500	4,000	5,500
ARTICLE 4.—Harnachement des Chevaux des Equipages Militaires.			
Entretien des effets en magasin et remplacement de ceux qui atteindront en 1864 le tenu de leur durée	20,000	26,000	46,000
Total du Chapitre 13.....	659,578	104,507	764,085
Crédit alloué pour 1863.....	—	—	700,018
Augmentation pour 1864	—	—	64,067

(XVIII.)—*Comparative Table of the Number of Officers and Men*
ENGLISH ARMY.

Effectives.	Number.	Cost.	Cost per Head.
		£	£ s. d.
1. Effective and non-effective services...	148,242	15,060,237	101 11 10
Deduct charges for auxiliary forces, } disembodied militia, enrolled } pensioners, and volunteers }	148,242	1,222,977	
		13,837,260	93 6 10
2. Effectives and non-effectives	148,242	13,837,260	
Deduct from charges, the non- } effectives	—	2,127,836	
		11,709,424	78 18 5
3. Infantry pay	102,765		
Cavalry „	13,867		
Artillery „	23,740		
Engineers „	4,906		
Military train pay.....	1,840		
	147,118	4,967,603	33 15 3
4. Administration of the army	148,242	164,917	1 2 3
Secretary of State for War, Com- } mander-in-Chief's department }	148,242	48,260	
Total	—	213,177	1 8 8
5. General staff	148,242	114,976	
Administration of the Army.....	—	213,177	
		328,153	2 4 3
6. General staff, Commander-in-Chief, } officers	261	79,476	304 5 —
7. War Office, Secretary of State for } War.....	1	5,000	5,000 — —
Other officers.....	715	163,177	226 6 5
8. Infantry of the line, officers and } men	81,300	2,479,600	30 1 —
9. Cavalry of the line	10,826	448,980	41 9 8

in the English and French Armies, and the respective Cost of each.

FRENCH ARMY.

Effectives.	Number.	Cost.	Cost per Head.
		fr.	£ s. d.
Effective and non-effective services	400,000	434,624,040	43 11 10
Deduct dotation	—	63,340,000	
Effectives	400,000	371,284,040	37 2 6
Infantry pay	244,023		
Cavalry „	59,679		
Artillery „	37,873		
Engineers „	7,809		
Military train pay	3,655		
Veterans' pay	64		
	353,103	147,801,500	16 13 4
Administration central personal.....	—	1,910,538	} — 5 1
„ „ material.....	400,000	549,500	
Depôt general of war	—	144,500	
		2,604,538	— 5 5
Etat-major or staff	400,000	21,280,287	2 2 6
Includes sub-officers and clerks	4,655	—	183 — —
Etat-major, 1st article, marshals of } France, &c. }	794	8,688,080	438 — —
War Office, Minister of War	1	130,000	5,200 — —
Other officers :	479	1,643,998	137 6 8
Guard imperial, infantry.....	17,784		
Infantry of the line in France	199,992		
„ „ Algiers	26,247		
Total	244,023	90,629,169	14 17 6
Cavalry of the line	53,175	24,043,056	18 1 8

(XVIII.)—Comparative

ENGLISH ARMY.

Effectives.	Number.	Cost.	Cost per Head.
		£	£ s. d.
10. Engineers	4,906	277,142	56 9 9
11. Artillery, horse and foot, including 1,882 at the depôt	22,372	870,602	38 18 3
12. Military train	1,840	71,381	38 15 4
13. Army hospital corps	940	23,510	25 - 2
14. Medical establishment	148,242	281,260	1 17 11
15. Commissariat charges.....	148,242	1,223,936	8 5 2
Fuel and light for the barrack department	148,242	278,537	1 17 7
			10 2 9
16. Clothing, &c., and establishment	140,754	630,385	4 9 7
17. Barracks and establishment, &c.	148,242	635,637	4 5 4
18. Martial law	148,242	43,012	- 5 9
19. Manufacturing department	148,242 {	956,365	6 9 $\frac{1}{4}$
Warlike stores.....		838,369	5 13 6
			12 2 $6\frac{1}{4}$
20. Small arms factory	148,242 {	181,944	
„ purchase and repair }		105,769	
		287,713	1 18 9
21. Gunpowder factory.....	148,242 {	75,617	
Purchase ditto and saltpetre		133,658	
		209,275	1 8 $2\frac{1}{2}$

Table—Contd.

FRENCH ARMY.

Effectives.	Number.	Cost.	Cost per Head.
		fr.	£ s. d.
Engineers	6,968	2,937,936	16 18 4
Artillery, horse and foot	37,873	17,350,464	18 6 8
With subscriptions and indemnities } the cost is	—	19,326,017	20 8 4
Military train	4,722	2,316,721	19 3 4
Military hospitals	4,573	4,921,884	43 — 10
Medical establishment	400,000	14,753,650	1 10 8
Commissariat, provisions, forage, } light, and warming	400,000	68,772,140	6 18 4
Clothing and the establishment	336,626	16,157,700	1 19 11
Beds and bedding, furniture, &c.	400,000	6,576,961	— 13 6½
Infantry buildings, repairs, &c., &c. ...	—	10,536,090	
		17,113,051	1 15 7
Justice militaire	400,000	1,260,987	— 2 6
Manufacturing department and war- } like stores	400,000	26,769,010	2 13 11½
Small arms for 1864	400,000 {	2,060,000	
„ repairs, purchase, &c.		1,449,230	
		3,509,230	— 7 3½
Gunpowder establishment and mate- } rials	400,000	8,391,365	— 17 6

(XVIII.)—*Comparative*

ENGLISH ARMY.

Effectives.	Number.	Cost.	Cost per Head.
		£	£ s. d.
22. Royal gun factory for materials } alone	148,242	127,280	- 17 2
Purchase of iron ordnance, &c.....	148,242	124,233	
		251,513	1 13 11
23. Purchase of horses : Veterinary establishment } Horses and medicine }	Total horses 14,511 {	3,921 32,493	
		36,414	2 10 3
24. Military education	148,242	172,201	1 3 2½
25. Barracks at home Works and buildings, and bar- } racks at home and abroad }	148,242 148,242	635,637 810,941	4 5 9 5 9 4½
		1,446,578	9 15 1½
26. Non-effective services	148,242	2,127,838	14 7 1

Table—Contd.

FRENCH ARMY.

Effectives.	Number.	Cost.	Cost per Head.
		fr.	£ s. d.
Foundries	400,000 {	638,000	- 1 3
Forges		420,000	
		1,058,000	- 2 1
Cost of purchase of remount horses and mules	85,705	5,199,250	2 10 10
Military education	400,000	3,004,033	- 7 1
Buildings and fortifications by the engineer corps and department ...	400,000	10,951,890	1 2 6½
Non-effective services, Hôtel des Invalides, compassionate allow- ances to old soldiers, widows and orphans, and to wounded soldiers	400,000	4,555,002	- 9 2½

(XIX.)—Comparative Table of French and

FRENCH MILITARY PAY.*

	Guard Imperial, Grenadiers.			Chasseurs of the Line.			Infantry of the Line.		
	Yearly Pay.	Daily Pay when Stationary.	Daily Pay on the March.	Yearly Pay.	Daily Pay when Stationary.	Daily Pay when on the March.	Yearly Pay.	Daily Pay when Stationary.	Daily Pay on the March.
	fr.	fr. c. m.	fr. c. m.	fr.	fr. c. m.	fr. c. m.	fr.	fr. c. m.	fr. c. m.
Etat-major } Colonel }	7,975	22 15 2	27 15 2	—	—	—	5,500	15 27 7	20 27 7
Lieut.-Colonel...	6,235	17 31 9	22 34 9	—	—	—	4,300	11 94 4	16 94 4
Chef de Bataillon, Major }	5,220	14 50 —	18 50 —	3,600	10 — —	14 — —	3,600†	10 — —	14 — —
Captain, 1st class	4,200	12 66 6	14 66 6	2,400	6 66 6	9 66 6	2,400	6 66 6	9 66 6
„ 2nd „	3,500	9 72 2	12 72 2	2,000	5 55 5	8 55 5	2,000	5 55 5	8 55 5
Lieutenant, } 1st class }	2,930	8 13 8	10 63 8	1,600	4 44 4	6 94 4	1,600	4 44 4	6 94 4
Lieutenant, } 2nd class }	2,655	7 37 5	9 87 5	1,450	4 2 7	6 52 7	1,450	4 2 7	6 52 7
Sous-Lieutenant	2,475	6 87 5	9 37 3	1,350	3 75 —	6 25 —	1,350	3 75 —	6 25 —
Serjeant	—	1 30 —	1 95 —	—	— 80 —	1 15 —	—	— 80 —	1 15 —
Corporal	—	— 86 —	1 41 —	— {	— 46 — — 41 —	71 —	—	— 46 —	— 71 —
Private	—	— 65 —	1 10 —	— {	— 30 — — 25 —	55 —	—	— 30 —	— 55 —
Boys under 14 ..	—	— 43 —	— 73 —	—	— 25 —	— 45 —	—	— 25 —	— 45 —
„ above 14 ..	—	— 65 —	1 10 —	—	— 40 —	— 65 —	—	— 40 —	—
Surgeon-Major 1	6,525	18 82 5	22 12 5	4,500	12 50 —	16 50 —	4,500	12 50 —	16 50 —
„ 2	4,900	13 61 1	16 61 1	2,950	8 19 4	11 19 4	2,950	8 19 4	11 19 4
„ Aide 1	3,670	10 19 4	12 69 4	2,000	5 55 5	8 5 5	2,000	5 55 5	8 5 5
„ „ 2	3,300	9 16 6	11 66 6	1,800	5 — 6	7 50 —	1,800	5 — —	7 50 —

* From the “Aide-Mémoire,” by V. Milet, Lieutenant, 38th regiment of the line, edition of 1860.

† All troops of the line have extra pay while in Paris.

Note.—The French military pay is in francs, centimes, and millièmes.

English Military Pay of Officers and Privates.

ENGLISH MILITARY PAY.

Grenadier Guards.				Regiments of the Line.				
Yearly Pay.	Yearly Pay.	Daily Pay.	Daily Pay.	Yearly Pay.	Yearly Pay.	Daily Pay.	Daily Pay.	
£	fr.	£ s. d.	fr. c.	£	fr.	£ s. d.	fr. c.	
200* - -	55,000	6 - 1	150 -	1,000 - -	25,000	2 14 9	68 50	Colonel
188 3 9	12,304	1 6 9	32 10	310 5 -	7,756	- 17 -	20 40	Lieut.-Colonel
119 15 -	10,475	1 3 -	27 60	292 - -	7,300	- 16 -	19 20	Major
282 17 6	6,808	- 15 6	18 60	211 7 11	5,300	- 11 7	13 90	Captain
132 16 -	3,175	- 7 4	8 80	118 12 6	2,965	- 6 6	7 80	Lieutenant
100 7 6	2,508	- 5 6	6 60	95 16 1	2,395	- 5 3	6 30	{ Sub-Lieut. or Ensign
—	—	- 2 2	2 60	—	—	- 2 -	2 40	Serjeant
—	—	- 1 5	1 70	—	—	- 1 4	1 60	Corporal
—	—	- 1 1	1 30	—	—	- 1 -	1 20	Private
—	—	—	—	—	—	—	—	{ Boys under 14 „ above 14
401 10 -	10,017	1 2 -	26 40	273 15 -	6,843	- 15 -	18 -	Surgeon-Major1
273 15 -	6,843	- 15 -	18 -	—	—	—	—	„ „ 2
182 10 -	4,562	- 10 -	12 -	182 10 -	4,562	- 10 -	12 -	„ Assistant1
—	—	—	—	—	—	—	—	„ „ 2

* Besides table allowance—
Grenadier Guards..... £ s. d. 1,333 6 8
Coldstream Guards 1,333 6 8
Scots Fusilier Guards 1,333 6 8

XX.—“*Statement of the Method of Applying Grants of Public Money in France to their appropriate objects, and of the System of Auditing the Public Accounts.*”

“ I have obtained, through the able aid of Sir John Bowring, some information since my arrival in Paris about the French financial system, especially that connected with the army, and the more I learn about it, the more satisfied am I that the healthy and efficient control which has for so many years been exercised over the military expenditure in detail has had a vast and, I think, beneficial influence on the political state of the country ; I specially mention the military outlay because for many years the accounts of the war department were considered to be in a far more complete state than those of the other ministers, and their exactness, and order operated in effecting regularity in the accounts and business of the other branches of the Government.

“ Do not mistake my meaning as to control over expenditure. I do not express any opinion as to the amounts drawn from the people, but merely refer to the strict control over the details of expenditure ; the question as to whether 400,000,000 frs. shall be expended on the army is in a degree distinct from the examination into the way it is expended ; now from the time of the first Napoleon, indeed during his reign, but specially since the Government of the present Emperor, the control over expenditure in detail in all branches of the service has been efficient and thoroughly searching.

“ Various modes have been followed during the last sixty years in assigning credits for the departmental expenditure, and the variations have, I think, misled us in confounding the changes in the appropriation of money grants with the very strict examination continuously enforced of the way in which money has been expended. At one time the French people knew that the taxes collected were given over to the Sovereign to be by him appropriated between the several ministerial departments. Then the minister of the department had the total funds placed at his disposal to be paid away for the different budget purposes ; at another time the appropriations to cover expenditure in excess of the detailed amounts specified in the budget could only be made with the sanction of the finance minister ; then the money could only be used for purposes specified under the several chapters, and even subsidiary divisions of each budget ; the surpluses on each chapter being yielded up at the close of the year's service. But since the present Emperor came to power, though there have been changes in the mode of voting the money, yet all measures have been calculated to establish order and exactness in drawing out the services in the budget.

“ Now, though the mode of voting money has varied, and the discussions in the Chambers have frequently been warm in opposition to the total credits, nevertheless the specifications in the budgets very fully and clearly showed the objects to which they applied ; and the examination into the actual expenditure has uniformly been the more searching consequent on this very distinctness ; no account, however small, has been paid without being closely scrutinized by able and efficient local officers, its propriety ascertained, and its application in

a right way, according to the entries in the budget, fully established; and, owing to the final audit by the *Cour des Comptes*, in general, no monies have been applied in any doubtful form that have not been subject to scrutiny, and all bad or objectionable applications of funds exposed. If you take up the financial system of France for inquiry, you will, I think, see how powerfully this financial check has operated in preventing France from being deteriorated under the various changes of government.

“ In addition to all this, I may mention the great and good effect of publicity. I do really think that there is more exact information obtainable about the financial affairs of France than we can readily procure about those of England; there is no secrecy and no desire to withhold information; indeed, the French authorities are only too proud to give information, and the clearness and exactness with which it is given in the printed reports is most praiseworthy, and might well serve as an example to England.

“ The French system of requiring from each minister annual detailed reports, with his signature affixed, not only of the estimated amounts in minute detail, but also of the result of the expenditure operations under the same classified heads as set forth in the budget, is certainly a peculiarly important feature in the French administration; and the evident carefulness and clearness with which these reports are prepared well entitle them to be adopted as models. This very efficient financial control may be said to extend its healthy influence to all branches of administration and, being centralized in the *Conseil d'Etat* in respect to the budgets, and in the *Cour des Comptes* as regards the actual results of the expenditure, and being strictly applied, a uniformity of management throughout all the Government transactions is thereby fully established.

“ This powerful check, over improper estimates and wasteful expenditure, by these two bodies is so fully known, that the Chamber of Deputies now abstain from criticizing the budget details; they content themselves by cutting down totals, and this year they have reduced the proposed expenditure for the army, leaving the Government to re-arrange the money totals under the proper and regular heads and sub-divisions of the budget, and the expenditure will eventually be examined by the *Cour des Comptes* as to whether it was laid out in accordance with the distribution in the revised estimates.

“ There is another part of the French financial system which has confused us, and that is the additional votes of monies made to meet excesses of expenditure over, or changes from, the amounts estimated. Every year there have been extra grants to the military services, indeed to all branches; but mainly in order to carry out the French system of preventing expenditure in a way different from that in which it has been voted or estimated; as I before stated, although the appropriation of credits to ministers has varied at different periods, yet at all times the allocation of money and for specific purposes has invariably been clearly set forth under different heads of service, before being expended by any of the ministers; but the credits, whether ordinary or extra, have gradually been improved in fulness; for instance, in 1831 the divisions under which ordinary credits were voted were 116, and in 1853 as many as 382

divisions used, under which to be applied for the various branches of Government.

“The annual reports of the *Cours des Comptes* show that the utmost jealousy has at all times been evinced to prevent expenditure beyond the credit specified for each head, and even when ministers have had the power to use unexpended balances from some heads for others found deficient, still the formal declaration of such transfers of credits and for what services has invariably been publicly made, so that the control over such appropriations has been effectually exercised and the amounts known to, and fully reported on, by the *Cour des Comptes*. So that, even when the Legislative Assembly has been deprived of the power of voting specific sums for specific purposes, the responsibility of ministers has not been lessened; on the contrary, the exercise of the power by ministers of applying general credits has created greater responsibility, for it placed on the individual minister the duty which, if performed by the Chamber, would have freed the minister from further care.

“The power of entailing on a nation liabilities, or of ordering the money of a people to be spent is a great authority, and is exercised under great jealousy even in France; but this power should not be confounded with the mere paying away of monies, which is of far less political importance; to this part of the operations, however, I think attention might be drawn; the facility with which relief is obtained in France from pecuniary responsibilities by the parties who disburse, merely seeing to the regularity of the documents as vouchers, is a marked feature in the French financial system; the organizing genius of the French people reduce these to such exact models that there can be no difficulty in a man who actually disburses securing himself against loss. But the authority who gives the order to perform the service or to incur the liability is the responsible person, and from the ministers downward, such persons, known as ‘*ordonnateurs*,’ are held accountable; and, whether minister, deputy, or who ever exercises this power in a way not duly authorized, whether to incur a debt for which he has no authority, in ordering money to be disbursed for a purpose not sanctioned, or in excess of the money sanctioned, lays himself open to strict scrutiny; and the independent and judicial action of that remarkable and useful body, the *Cour des Comptes*, regenerated in 1807 by that able administrator Napoleon, faithfully exposes to the Sovereign of France and to the Legislative Chambers, all misapplication of funds, whether as respects purposes or amounts.

“The essential point in the French financial administration is in the ordering or in the incurring of the liability, and not in the mere paying away, as with us, of monies. Here I may mention the wide difference between the French and English systems. The former accepts the budget as containing obligations for the paying away of monies, and closely follows the expenditure until the service is performed and the liability closed. The English system makes the payments within the year represent the liabilities of the year, thereby vitiating that accurate comparison which the French strictly maintain between the actual and estimated payments for the entire services entered in the budget.

“This independent check gives rise to many extra grants for specific services, which have hitherto given the idea of inexactness in the preparation of French budgets; but the various kinds of extra grants, complementary, supplementary, and extraordinary, are all intended to enforce care in estimating, or to provide for the exact appropriation of the funds in such a clear and distinct manner as to allow of the audit by the *Cour des Comptes* being efficiently and completely performed from the recorded documentary evidence, without entailing the necessity of demanding further explanations from the ‘*ordonnateurs*.’

“You may suppose that when a minister has to assign a reason for expending more money for any one of the many heads under which the service he controls is carried on, the officer who has to prepare the calculations for the minister, when he applies for ‘*la fixation primitive des crédits de chaque service*,’ will be exceedingly careful how he performs his duty before he obliges the minister to ask for or to expend more money than that estimated; the very designation affixed to the extra credits, as to whether it is the complement, the supplement, or the extraordinary grant that is needed, will, in a degree, indicate the cause of the application for additional funds, whether the demand is occasioned by unforeseen services, or from careless or inaccurate estimates. Now if you bear in mind how difficult it is for any one, even with the fullest departmental experience, to estimate exactly for a year’s expenditure commencing eight months after the passing of the budget, as in France, you will see that where a service under many different heads requires special grants for each, then in proportion to the number of heads so will be the chance of errors in estimating be increased, and necessarily of having to ask for additional grants. And as the French military budgets are prepared in far greater detail than in England, especially under those heads of expenditure which are most difficult to control, it is not to be expected that complete exactness will invariably be obtained; but, I think, the French system would contrast favourably with that of England, if our military expenditure was estimated for, and the operations shown as fully and as distinctly under all heads as in France.

“But the order, regularity, and economy pervading all branches of the French military service prevent much of the evil which might result from this multiplication of grants if they were introduced into England with our disjointed and defective system. The ‘*conseil d’Etat*,’ formed by the present Emperor, composed of a number of able men, selected from all branches of the service, examine into many of the French measures before being submitted to the Legislative Assemblies, and thus the thorough overhauling which such measures undergo proves a useful check on all ministerial proposals; then, as respects the annual budgets, the ministers, as individual members of the Government, appear before the *conseil d’Etat*, and are subject to a strict examination on all money demands; even the subordinate chiefs of the department under him are called before the ‘*conseil*’ for examination, and I learn that one subordinate of the Minister of War had for twelve years been one of the ‘*conseil*’ and frequently opposed the estimated outlay of his chief the minister;

and even the Emperor himself has lately, on three several occasions, been opposed on important affairs in the 'conseil' and gave way to their views.

"It is owing to this great and thoroughly established freedom in the council, fully recognized and acted upon by the Emperor, and which is known to the people to prevail especially in respect to the financial control, which has, I think, a most efficient and salutary influence on the minds of the French; the people know and appreciate the economy in the detailed money assignments which flows from the control of the 'conseil,' and notwithstanding the large augmentations to the taxation of the country, and the excessive armaments maintained, they do not fail to perceive that the present Emperor has seen to the economical application of the revenues and immensely developed the resources of the Empire; whereby the incidence of taxation will in a few years be felt to be light as contrasted with that of the year 1848; and with the wonderful extension of the material prosperity of France there are many signs of the people of France being well to do, and with this result from the Empire there is amongst the mass great contentment.

"If you use the French military budget, I hope you will look in the library of the House for the following French reports, being one year's set of books, say for 1854, to give you a right idea of the French system. The French budget for 1854 (similar to the one for 1864, which you have), also '*Comptes Généraux présenté par le Ministre de la Guerre pour l'Exercice 1854,*' also '*Rapport à l'Empereur et Déclarations Générales de la Cour des Comptes sur les Comptes de l'Exercice 1854,*' will afford you an insight into the French financial system. Now the budget for 1854, passed in 1853, some months before the commencement of the year, fixed the army at 358,518 men, and 83,343 horses; but the '*Comptes Généraux,*' at p. 1, shows that the strength actually maintained was 488,063 men, and 107,309 horses; large augmentations having been made to the force owing to the war with Russia; and at p. 2 you will see that the original credit for the army was increased from 307,686,046 frs. to 598,750,996 frs., all extra grants being fully detailed both as to amounts and for what purposes assigned; and p. 142 of the '*Rapport de la Cour des Comptes*' shows the various heads under which the additions were made; p. 183 gives several useful comparisons; p. 38 of '*Comptes Généraux*' gives a résumé of the credits and expenditure. The budget shows the peace establishment of the army and standard of expenditure which the Government desire to maintain, the '*Comptes Généraux*' give the actual results; and the '*Rapport de la Cour des Comptes*' the verified accounts, closely indicating in detail the expenditure on the liabilities stated in the budget, as well as of all subsequent credits. These three official reports will, if carefully compared with the English financial accounts, fully bear out the claim which the people, as well as the official administrators, make on behalf of France, that it has unreservedly accepted and comprehensively achieved, through the completeness of its budget, the regularity of the forms, and strictness of control of the public accountability, a financial work, the most liberal and the most favourable for the power and prosperity of the people.

“ You will not fail to observe that the French Government publish to the nation that which England does not furnish, an exact statement of the strength of the army actually kept up during the year. Now though the establishment of the British army is the first vote of the army estimates, and is (erroneously) supposed to determine the propriety of all the money demands, yet in none of the annual accounts do we ever have any comparison of the actual with the voted strength.

“ There is also another report published by the French Government, viz., ‘*Compte Général du Matériel de la Guerre*,’ which contains very complete information on the quantities and values of the stores, provisions, and cattle of the army, and, in the space of 178 pages, condenses from upwards of 6,000 accounts and 83,000 vouchers into an available form the accounts connected with fourteen branches of the army service to which stores belong; and when I mention the provision stores, clothing, camp equipage, remounts, ordnance and engineer stores, and that the quantities and values at the beginning of the year,—the receipts and issues in quantities and values during the year,—and, finally, the remains, quantities, and values at the end of the year, are very fully set forth, you will appreciate the vast utility of such a report in ensuring effectual control over the expenditure for stores. Now no such report has ever been prepared in England; but without it the check on our war material expenditure is useless; and this the most needed of all accounts is not obtainable as in France.

“ The prominent features in the French military system may be briefly said to be, the admirable division of functions under efficient heads of the innumerable duties for which the minister of war is responsible; the clearness, fulness, and accuracy of the entries in the budget; the regularity and exactness of the monthly estimates of expenditure under the same heads, chapters, sections, and articles as in the annual budgets; the promptness with which the liabilities incurred for the service of the year are inquired into in the locality and at once settled, the money payments made, and the vouchers carefully and speedily audited by the intendance, then forwarded to the War Office, and thence sent on to be criticized by the *Cour des Comptes*. The annual report of the minister of war on the financial operations of the year, accounting for all differences between the estimates and actuals, and of all sums unpaid to clear off the liabilities. Finally, the strict scrutiny of the *Cour des Comptes*, their judicial declaration in open court, and their report to the Emperor as to the accuracy of the calculations, correctness of the vouchers, and propriety of the charges.

“ These, then, are, I think, a few of the principal arrangements by which the economy, and with it the efficiency, of the French war system in all its branches are ensured. No doubt the heads of the administrative and executive departments, and the officers by whom the duties are conducted, are able and efficient, but they are not superior to those available and obtainable in our own service; but without the great excellence of the central control, and the useful publicity, fulness, and clearness given to the war office affairs, their labours would be seen to as little advantage and prove as barren of good financial results as those of our own war department.”

On a CONTINUOUS PRICE of WHEAT for 105 YEARS, from 1380 to 1484. By the REV. J. E. T. ROGERS, M.A., Professor of Political Economy in the University of Oxford; and Tooke Professor of Economic Science and Statistics at King's College, London.

[Read before the Statistical Society, 15th December, 1863.]

THE members of this Society are well aware that continuous series of prices of any commodity in high demand, when contrasted with the prices of labour, are the best evidence of the economical state of the community in which such data are to be found. Among such prices none is more suggestive in England than that of wheat, which has been from the earliest times the habitual food of the people of this country.

In order, however, to draw any exact inference it is essential that the price in question should be derived from the same locality, or from some so near to each other as to leave no doubt that the element of distance has not affected any of the variations in the scheme. And if two or more of such continuous annual records can be found, the subsidiary evidence of more remote localities will be useful as determining the mutual value of nearer places, and as reflecting on some other topics in economical history, particularly the facility of transit and the extent to which the conveniences of markets rendered prices tolerably uniform. And here I may observe that my investigations into the history of prices in the middle ages lead me to conclude that the means of communication were far easier and cheaper than is commonly supposed. The hasty reasoning which habitually leads careless thinkers into assigning a plurality of effects to a single cause has, I make no doubt, induced them to imagine that the time before the Reformation was one of social barbarism and economical wretchedness. But the facts lead to a far different conclusion. Whatever were the religious and political benefits of the Reformation, and I should be the last person to dispute either, there is not a shadow of doubt that the revolution of the sixteenth century was followed by enormous social evils and long social misery. The proof lies in the same premises, the relations of the price of labour to that of food.

The prices of wheat annexed to this paper are taken from a series of farming accounts of the estate of Heyford Warren in Oxfordshire.

The greater part of this parish has been the property of New College ever since the foundation of that corporation, and belonged previously to the family of Lisle, from whom it was purchased by William of Wykeham.

Out of this estate the prior and convent of Bicester derived a yearly rent of five quarters of wheat, payable on All Saints' Day (November 1), and paid by the society continually up to the end of the reign of Richard III. In the early years of their possession the college cultivated the estate by its own bailiff, according to the custom generally prevailing among landowners of the time. But at the beginning of the reign of Henry IV, that is, at the close of the fourteenth century, the society substituted, as most other corporations did contemporaneously, a system of leases for short terms in place of the old method. But the rent due to the prior was received, and, instead of paying, as before, a portion of the farm produce, the rent-collector purchases five quarters of wheat every All Saints' Day for the use of the convent, the formal receipt of the conventual officers being generally annexed to the yearly roll of account. In 1484 the college agreed to allow 5s. 6d. a quarter, and the annual notice ceases.

The Heyford series is complete, except for the years 1381, 1383, 1386, 1391. The price of wheat for those years is supplied from another series of accounts, that of Weedon, in Bucks, a place sufficiently near for all purposes of continuous comparison. Those years, marked w in the table, do not present any striking anomalies in money value, and could be fully sustained from other sources. It may be observed that the prices in Weedon series correspond very closely with those of Heyford for almost fifteen years.

It will be manifest at a glance that, during the whole of the period before us, prices of food, were, with few exceptions, remarkably low. They are far lower than those which prevailed during the fourteenth century and that part of the sixteenth during which accounts of farm produce have come under my inspection. The harvests during this time must have been exceedingly abundant; more so, in all likelihood, than *mutatis mutandis*, they were in the first half of the eighteenth century, a period which has always been cited as characteristically prosperous.

It is well known that the history of the greater part of the fifteenth century is very obscure and scanty. The age of monastic annals was passing away; that of chronicle writing by professed authors hardly begun. But there is general testimony to the fact that the condition of the labouring classes was good; and it is certain that, in some way or other, the great mass of the community was in this period raised from a state of villenage to the position of free labourers. The annexed table of wheat prices is strong

evidence that the condition of the English labourer was as prosperous as it is made out to be by Fortescue.

Of the one hundred and five years twenty-one alone can be called relatively dear; that is, in them a price is quoted above 6s. In one of those which I have selected, 1389, the price is 6s. only; but as it follows a year of exceptionable cheapness, it was probably a year of considerable dearth. These twenty-one years are 1389, 1390, 1400, 1401, 1402, 1408-9, 1416, 1418, 1428-29, 1432-33, 1437-38, 1460-61, 1477-78, 1480-81. And in only two of the years, 1390, 1438, was the price indicative of famine. The highest of these prices, however, is much below the amount at which wheat was sold during two or three of the years of Edward II, and some in those of the reign of Edward III.

Some low prices for this period are to be found in the works of Fleetwood and Macpherson. But they are evidently untrustworthy and derived from the loose statements of chroniclers. The evidence of a series like the present is sufficient to upset all these vague notions and the inferences gathered from them.

The coin of the time was of customary fineness, the pound of silver containing 11 oz. 2 dwts. pure metal, and 18 dwts. alloy. But during the period the currency was twice degraded. Up to 1412 the pound sterling, that is, 240 silver pennies, contained in modern value 2*l.* 6*s.* 6*d.*; in 1412 the amount was diminished to 1*l.* 18*s.* 9*d.*, and again in 1464 to 1*l.* 11*s.* In consequence of the low price of corn, notwithstanding these degradations, Adam Smith concluded that silver was becoming scarcer during the whole of the fifteenth century. I should agree with this inference, had not the price of labour risen.

At the commencement of the period the price of common labour was generally 3*d.* a-day; of artizan's labour, as carpenters, masons, and sawyers, 4*d.* But at almost the end of the first quarter of the fifteenth century these kinds of labour rise respectively to 4*d.* and 6*d.*, and remain at such rates till the close of Henry VIII's reign. On the other hand, the price of lead, wrought-iron, and brass slightly falls. These metals are generally sold by the pound at about the rate of $\frac{3}{4}$ *d.*, $1\frac{1}{2}$ *d.*, and 3*d.* respectively.

I may add that the earlier part of this period was the time in which English wool reached its highest price. The consequent extension of the stock on farms did not affect the produce of corn, nay, probably increased it by dressing the land. The staple of the wool seems to have been rather long and certainly coarse. I derive this from the quality of the cloth with which William of Wykeham's mitre case and travelling bag are lined, antiquities which are still preserved in New College. English wool was not so good in the middle ages, as all others were very bad.

Wheat was, I have no doubt, the habitual food of the people. The question, as to what the labourer in the middle ages lived on, has been occasionally mooted, and many persons have argued that the customary food was some inferior grain. But the facts of several thousand accounts for the thirteenth, fourteenth, and fifteenth centuries, which it has been my business to study, are conclusive against such an impression. Of all prices of grain the most abundant are those of wheat, barley, and oats; of these again the largest information is that which can be supplied for wheat. Barley is generally used for malting, oats for cattle. Labourers rarely use oats, except on occasions in their porridge. The breadth of wheat, barley, and oats, sown on the land from year to year, occupies by far the largest part of the acreage. Beans, peas, and vetches are grown, but they are almost invariably used as food for cattle.

Farm labourers had generally an allowance of wheat at the rate of a quarter every ten weeks. The bailiff had a quarter every eight weeks. This wheat was, in most cases, inferior, going under the name of cursal or scurril wheat. They had sometimes an allowance of mixtil, that is, a combination of different grains in fixed proportion, as wheat and barley; sometimes wheat, peas, and barley. Peas are white and black.

Malt was made of wheat, barley, and oats. The chief consumption of malt was in harvest time, when, as now, the rate of wages for day work was much higher than in ordinary times. Corn was reaped at from 1s. to 8*d.* the acre, that is, at least, at a rate proportioned to modern prices.

Rye was so rare a grain that I have not been able, though I have abundant evidence of the price of other cereals, to get a complete series of rye prices during the thirteenth, fourteenth, and fifteenth centuries.

I have annexed to the series given from Heyford Warren two others from Hornchurch, in Essex, and from Stert, in Wiltshire. The former of these is sufficiently near London to be affected by London prices, and will be found on the whole with the estimate of this variation included to correspond pretty nearly to the list from Heyford. As might be expected, the divergence is the greatest in cheap years. It is a well-known economical law, that prices of wheat, or of any other absolute necessary of life, decrease in plentiful years at a very different ratio from that at which they increase in dear ones. I should mention that prices of labour in London were at much higher rates than in country places. New College has possessed from its foundation some houses in Aldgate, the yearly rolls of which I have examined, and I find that labour was fully 25 per cent. higher in this city than it was in other estates of that corporation during the time before me.

On the other hand, there is a close correspondence between the prices of the short series from Stert, near Devizes, and those from Heyford. The conditions of both parishes are nearly the same; both are in remote country districts, and therefore both were exposed to the same local influences for cheapness and dearness. Unfortunately, the Hornchurch and Stert series are both short. The college abandoned farming on its own account at Hornchurch in 1422, and at Stert in 1430. The thirty-three years subsequent to this date in the Hornchurch series are supplied from an agreement entered into with the college to make the vicar a yearly allowance of wheat, barley, rye, and oats at market prices.

I have also added a table of the prices of wool, extracted from the accounts of Alton Barnes, near Malmesbury, in Wilts. It will be seen that the price of wool does not follow that of wheat. It was, however, determined by the course of the seasons, over dry summers affecting the produce of hay, over wet ones the health of the animal. Indeed, I know no index so suggestive of the seasons as the proportion of sheep which those accounts inform us perished yearly by murrain, the generic name by which all the diseases of animals are designated. The ravages of disease among flocks in the middle ages were frequently as high as 25 per cent. on the number kept.

It would not be to the purpose to lead this society into an anti-quarian discussion as to the method of farming in the middle ages, still less to dilate on the social habits and conveniences of our ancestors from four to five hundred years ago. But there are a few economical facts and inferences which I venture to think are not irrelevant to the subjects ordinarily before the society. These are the rate of production, the cost of land, and the amount of the population. The fellows of this society are well aware of how closely these particulars are allied, and how it is possible to determine with some degree of certainty, at least, what might have been the sum of each of these quantities if the factors of the first, and perhaps of the second, are supplied. I shall not pretend to the accuracy which a mathematical investigation of these relative powers might collect, but only indicate in general terms what are the conclusions at which it seems reasonable to arrive. The dominant element in the calculation is the rate of production.

Our forefathers were far from ignorant of the advantages of laborious adaptation, and of the value of agricultural improvements. They ploughed their land repeatedly, were alive to the profit of sheep dressing, manured the soil diligently, drained and ditched it regularly, marled it when needed, and used lime largely to destroy weeds and divide stiff clays. They spent much labour in hoeing their crops, and, as is evidenced by the wages paid to sowers, and the rate of seed per acre, had a full sense of the significance of agricultural economy.

Half of their land was left, however, to unproductive fallow. Not that the arable acreage was probably much less than at present. No doubt some soil which is now under the plough was in those times poor pasture. But on the other hand, some land which has been for time out of mind only poor upland pasture was in past days brought under cultivation. I have seen myself on some of the Hampshire and Sussex downs the evidence of ancient culture. The arts of peace leave more durable signs on the surface of the earth than those of war, and the marks of the plough may still be traced on spots which tradition only declares to have been the scene of battle and destruction.

But the produce was very scanty. The seed was invariably or almost invariably two bushels to the acre, the produce rarely exceeded twelve bushels, even in the best years, and this, it may be concluded, is nearly the limit of unscientific—to use a phrase applicable to modern improvements—and uninstructed agriculture. Cicero tells us that eightfold was a good rate in Sicily, in his time the granary of Rome.* A crop of thirty-five bushels on average land under modern culture is by no means excessive. Land under tillage then, at the present time, yields $2\frac{1}{2}$ times more than it did in the days of our forefathers.

But though much land was tilled then, very little was productive. Half the soil was in fallow, and the fallow was ploughed over and over again that it might recover its vigour. Add to the amount under fallow that which has been rendered available for crops at the present time, the downs, for instance, at Brighton and Eastbourne, and similar places, and we shall find that there is now probably $2\frac{1}{2}$ times more wheat-bearing land than at that period.

But this is not all. Our forefathers had no winter roots, no artificial grasses. Turnips, carrots, parsnips, and I need not mention beet and potatoes, were things of the future. They had coarse cabbage and the unimproved kinds of onions. They flavoured their poor soups with “jack-by-the-edge,” a weed known to most of us by its spike of white flowers, and coarse alliaceous smell. In spring they sold the nettles which grew in their gardens. It is said that nettles are wholesome and pleasant spring food; such an impression must be historical. They were, perhaps, in those days of salt meat, six months of herbless winter, and endemic scurvy. But the eagerness with which our forefathers gathered nettles and such wild herbs reminds one of the danger which the owners of those pastures run where the autumn crocus grows profusely, when their cattle fed all the winter on hay are turned loose among the spring meadows. Potatoes, the great remedy for scurvy, have occurred to me as priced

* Cicero in Verrem, iii, 47.

in 1590, when they were bought at 2s. 6d. a-pound for Queen Elizabeth's table.

Clover, too, and the best of other artificial grasses were unknown. I am not botanist enough to determine what are the natural grasses of our country, but entertain a strong suspicion that they are of the least nutritive kind. It is not too much, at any rate, to think that the absence of these modern but familiar conveniences diminished the rate of production by $2\frac{1}{2}$ times more.

Lastly. Cattle and sheep were poor, small, and long coming to perfection. Stunted by the winter's privation, they took double time to be eatable. We have often laughed at the story of the Irishman's plan of making his bacon streaked, by alternate starvation and plenty in the diet of his pig. With our forefathers the variation was a permanent necessity. I have before me the weights of oxen purchased by the Comptroller of Edward VI, and find that the average of thirty oxen was about 4cwts. Besides, fat was six times the price of meat. Such causes may fairly diminish the rate of production by another unit. I am disposed, therefore, to conclude that the rate of production was about one-eighth of that which is customary at present. Now the population of England and Wales is about, in round numbers, at present twenty millions, of whom about fifteen millions are maintained on the agricultural produce of this country. If to those diminishing forces in population be added the insecurity of some regions, and the relatively backward state of others, as the condition of the Welch and Scotch marches, and that generally of the Principality, especially during the time of Owen Glendower, there is no great rashness, it may be conceded, in fixing the maximum of population in the fifteenth century, and indeed long after, at from one and a-half to two millions, and in inclining to the less rather than to the greater number.

Similar inferences can be gathered from the rent of land, taken concurrently with the price of labour and the price of food. It is the custom for political economists to assert that the rent of land depends on the difference between the produce of the best natural powers and that of the worst, the latter being such soil as will merely repay the capital and labour expended plus the market profit expected. It seems to me more natural to say that the cost of land depends on the cost of production from land corrected by the demand for the produce. In other words, if, to reduce the formula to the simplest numbers, the aggregate of labour, capital, and profit required to produce 100 quarters of wheat be 100*l.*, and the market value of the wheat be 40*s.* the quarter, the proportion paid for rent will be 100*l.*, and if by some agricultural improvement the cost of production falls to 80*l.*, the rent will rise sooner or later to 120*l.*

In the fourteenth and fifteenth centuries the ordinary rent of

arable land was from 4*d.* to 6*d.* the acre. The rioters of Blackheath demanded, and by the charter (afterwards annulled in 1381) procured, that the rent of land should not exceed 4*d.* an acre. It has been stated that our forefathers, as far as manual labour went, employed most of the modern arts of agriculture; that is, they developed the artificial fertilities of the soil. But the rent of the same parcels of land in purely agricultural districts, and where no virtual improvement has been induced, or what may be called the merely mechanical junctions of the earth, has risen eighty or one hundred times since the period which this paper deals with. In other words, while the nominal price of wheat has risen about twelve times, and labour generally about ten, the price of land has risen in a proportion far larger than the other economical forces. Nor would there be any necessary limit to this increase, except from the practices prevalent in this country, of securing political influence by precarious tenancies, instead of stimulating agricultural improvement by the "magic" of a term of years; and of protecting the landowner against his own vices and follies by the barbarous wastefulness of a strict settlement. We profess to have adopted the principles of free trade, and suffer seven-tenths probably of the land in England to be tied up by arrangements as alien to the genius of English law, which professes to abhor perpetuities, as they are to economical science, which, above all things, desires the free transfer of land, and to common sense, which has no great reverence for the morality and decorum which is guaranteed by the police of a conveyance.

The labour of procuring the means of subsistence then, with the appliances which the agriculture of the fifteenth century, afforded was so great that the rent of land, except under the compulsory service of villenage, absorbed but a small portion of the produce. But the continual recurrence of dearths and pestilences proves, among other evidence, that population pressed closely on the means of subsistence.

Villenage still subsisted; but the course of time, and the disposition of the law towards those persons who were held to predial servitude, but who were free to all others except their lords, had greatly mitigated the earlier theory of the bondsman's obligations and liabilities. Their tenure was secured on the terms of labour. Such labour, however, as was extorted from them was, as might be expected, unprofitable, as the labour of serfs was unprofitable in Russia. Hence it was the interest of the landlord to exempt them from personal labour on the payment of money rents, the incidents of villenage, valuable as liable to escheat, being retained. This commutation of service for payment begins very early, and, I imagine, spread very rapidly. By the middle of Henry VI's reign, that is about 1440, labour rents had, I am convinced, altogether ceased, and some of the

claims of the rioters of Blackheath were silently accorded to the operations of economical causes. In so unnoticed a change as this, which transformed a great part of the community from serfs to occupiers of land held to low fee farm rents, we must not, I am convinced, look for any exceptional cause. The most natural and sufficient reason for the change was the greater convenience of fixed payments compared with a service or labour rent. Of the same stock with the small landowner near them, engaged in similar occupations, and possessed, except in the single particular of personal dependence, of the same rights with freemen, there was no room for the antipathies of race, or the discredit which enforced labour brings on labour itself.

It was certainly during this time that the class of small freeholders arose. The fact is traceable, not only in the suggestions of legislation and history, but in the change made by the owners of land in the management of their estates. In the fourteenth century the landlord invariably cultivated his own estate by a bailiff. It is from the numerous records of such farming, the account being presented annually to the employer, that the greater part of the facts which I have gathered about prices in the early part of the middle ages are derived. Between the last thirty years of the fourteenth and the first forty of the fifteenth centuries this practice is almost universally abandoned. The landlord ceases to cultivate his own land, and two persons appear on his estate, one, a collector of rents from the tenants, free and copyhold, the other, a farmer who cultivates the soil for his own profit, at a fixed rate, sometimes for a long term, but with his landlord's stock, which he is pledged to restore, or its equivalent in money (the amount of such liabilities being annually endorsed on the account rendered at the expiration of his tenancy). After a short time, however, this practice ceases; the tenant finds stock himself, and occupies an estate, either under a lease or very often by purchase. In the estates with which I am most familiar it was not to be expected that those who held to their successors would finally alienate their lands, but it was the case beyond doubt with those who had lay tenures.

That the tenant, at will or on lease, should become an owner in fee, could, I think, only take place under such favourable circumstances as those which affected the great mass of society at this time. Food, during the greater part of the period before me, was more abundant and cheap than it had been before, or than it was afterwards, except at the commencement of the eighteenth century, when, as is well known, there was a long succession of abundant harvests. And the exigencies of the great lords who were involved in the civil wars of the period must have disposed them to part with portions of their lands to husbandmen on advantageous terms.

The Wars of the Roses almost exterminated the nobility, but hardly affected the great mass of the community. In the accounts of the fifteenth centuries, hundreds of which it has been my fortune to consult, I have never yet met with the least allusion to the strife which was raging, or with any complaint of loss from the ravages of war. The violence of the storm burst in a region far above the heads of the people, and did not generally affect them except as a means for fertilizing their labour. The barons and their retainers were worsted in the struggle, and the husbandmen reaped the profit of his exceptional position.

NOTE.—*Statement of the Weight of Silver contained in the Shilling during the Fifteenth Century, in illustration of the following Tables.*

In deference to a wish expressed at the time of reading this paper, to the effect that information should be given as to the amounts of silver indicated by the prices in the tables annexed, it may be observed—

1. The silver was of the same fineness as at present, that is, it was sterling, or $\frac{3}{4}\frac{7}{8}$ ths fine.

2. The largest coin in circulation was the groat. The shilling was only money of account. Had there, however, been such a coin, it would have contained, according to the regulations of the Mint up to 1412, 216 grs.; from 1412 to 1469, 180 grs.; from 1469, 144 grs.; or, in pure silver, about 200, 167, and 133 grs. respectively. Very few existing coins, however, represent this proportion exactly.

3. Did the modern shilling represent a market ratio to gold, it would contain 96 grs. In reality it contains $87\frac{1}{2}$ grs. only. But, as is well known, the silver currency of this country is purposely overvalued.

It must be remembered, however, that inferences from the weight of silver in coins of a certain date have only a general significance when applied to prices. A currency may be actually depreciated to a considerable extent before it sensibly falls in value, though the process by which a debasement is detected is generally far more rapid. The depreciation of course will be ultimately felt, but not simultaneously with the issue. Nay, the natural process by which an undervalued metallic currency is diminished may have the effect of retarding the fall in the estimate of a new denomination, by creating a temporary scarcity.

APPENDIX.

I.—*Statement of the Prices of Wheat per Quarter at Heyford Warren, near Bicester, Oxford, from 1380 to 1484; at Hornchurch, Essex, from 1392 to 1454; and at Stert, near Devizes, Wilts, from 1393 to 1430.*

Years.	Price of Wheat per Quarter.			Years.	Price of Wheat per Quarter.		
	Heyford Warren, Oxon.	Horn- church, Essex.	Stert, Wilts.		Heyford Warren, Oxon.	Horn- church, Essex.	Stert, Wilts.
	s. d.	s. d.	s. d.		s. d.	s. d.	s. d.
1380	4 —	—	—	1421	4 —	6 2	4 4
1381	5 — w	—	—	'22	4 —	5 —	4 —
'82	4 —	—	—	'23	4 —	6 8	4 8
'83	4 — w	—	—	'24	4 —	6 8	4 6
'84	4 4	—	—	'25 ...	3 4	5 4	3 10
'85 ...	3 —	—	—	1426	3 2	4 8	3 2
1386	3 4 w	—	—	'27 ...	3 4	4 8	4 —
'87 ...	3 4	—	—	'28	6 8	6 8	9 8
'88	2 10	—	—	'29	6 8	10 —	7 4
'89	6 —	—	—	'30	6 —	8 —	6 8
'90	10 —	—	—	1431	6 —	6 —	—
1391	4 — w	—	—	'32	6 8	9 —	—
'92	3 4	3 10	—	'33 ...	6 8	8 —	—
'93	3 —	4 —	4 —	'34	4 —	6 8	—
'94	2 8	3 8	3 4	'35 ...	5 —	6 8	—
'95	3 —	5 —	4 8	1436	4 —	7 4	—
1396	5 —	7 —	6 8	'37 ...	8 —	13 4	—
'97	6 —	6 —	5 5	'38	13 4	18 —	—
'98	5 4	5 4	5 —	'39	4 —	—	—
'99	6 —	6 4	5 4	'40	3 4	4 6	—
1400	7 —	7 4	6 —	1441	3 4	5 2	—
1401	10 —	10 6	10 3	'42	2 8	5 2	—
'02	8 —	7 6	6 4	'43 ...	2 10	5 4	—
'03	5 4	5 —	4 8	'44	2 8	5 10	—
'04	4 —	5 —	3 10	'45	3 —	6 —	—
'05	4 —	4 4	3 2	1446	5 4	7 6	—
1406	4 —	6 —	4 5	'47 ...	4 9½	5 —	—
'07	4 —	5 4	4 4	'48 ...	5 —	5 —	—
'08	8 —	8 10	6 4	'49 ...	3 4	6 8	—
'09	8 8	10 —	10 —	'50 ...	4 —	8 —	—
'10	4 8	4 10	5 6	1451	4 10	—	—
1411 ...	4 4	4 8	4 6	'52	4 4	6 4	—
'12 ...	4 8	6 8	4 4	'53	4 8	5 4	—
'13 ...	4 4	6 2	3 10	'54	3 —	5 4	—
'14	4 4	4 9	3 11	'55	4 —	—	—
'15 ...	6 —	7 1	6 —	1456 ...	4 —	—	—
1416	8 —	11 —	7 10	'57 ...	5 8	—	—
'17 ...	5 —	5 4	4 4	'58	6 —	—	—
'18 ...	6 8	7 —	8 4	'59	5 —	—	—
'19 ...	4 —	5 —	4 —	'60 ...	8 —	—	—
'20 ...	4 —	6 —	6 —				

Statement of the Prices of Wheat per Quarter—Contd.

Years.	Price of Wheat per Quarter.			Years.	Price of Wheat per Quarter.		
	Heyford Warren, Oxon.	Horn- church, Essex.	Stert, Wilts.		Heyford Warren, Oxon.	Horn- church, Essex.	Stert, Wilts.
	<i>s. d.</i>				<i>s. d.</i>		
1461	8 —	—	—	1476	4 —	—	—
'62	3 1	—	—	'77	6 8	—	—
'63	2 1	—	—	'78	7 —	—	—
'64	3 —	—	—	'79	5 4	—	—
'65	3 —	—	—	'80	7 —	—	—
1466	3 5	—	—	1481	8 —	—	—
'67	4 10	—	—	'82	10 —	—	—
'68	5 —	—	—	'83	5 4	—	—
'69	5 4	—	—	'84	5 4	—	—
'70	5 8	—	—				
1471	5 2	—	—				
'72	3 4	—	—				
'73	3 6	—	—				
'74	3 4	—	—				
'75	4 6	—	—				

Note.—The letter (w) in the first column means that the prices for the years to which it is annexed are taken from farm accounts at Weedon, in Buckinghamshire.

II.—Statement of the Price of Wool per Tod of 21 lbs. at Alton Barnes.
Wilts, from 1376 to 1432.

Years.	Price of Wool per Tod of 21 lbs. at Alton Barnes, Wilts.	Years.	Price of Wool per Tod of 21 lbs. at Alton Barnes, Wilts.	Years.	Price of Wool per Tod of 21 lbs. at Alton Barnes, Wilts.
	<i>s. d.</i>		<i>s. d.</i>		<i>s. d.</i>
1376	7 6	1396	5 2	1416	6 —
'77	—	'97	5 4	'17	5 —
'78	7 —	'98	5 2	'18	5 —
'79	7 —	'99	5 6	'19	6 —
'80	—	1400	5 6	'20	6 —
1381	—	1401	5 10	1421	5 4
'82	6 —	'02	6 1	'22	5 —
'83	—	'03	6 8	'23	5 9
'84	—	'04	6 9	'24	6 6
'85	6 —	'05	5 9	'25	5 6
1386	4 —	1406	7 4	1426	5 4
'87	5 —	'07	8 —	'27	5 6
'88	5 3	'08	7 8	'28	6 4
'89	—	'09	7 —	'29	6 6
'90	3 11½	'10	7 2	'30	5 9
1391	—	1411	6 4	1431	5 10
'92	5 5	'12	6 8	'32	6 —
'93	5 6	'13	6 8		
'94	5 6	'14	6 2		
'95	4 6	'15	6 2		

On the COMMERCIAL PROGRESS and RESOURCES of CENTRAL BRITISH AMERICA; the LAKE WINNIPEG and SASKATCHEWAN DISTRICTS. By HENRY YOULE HIND, M.A., F.R.G.S., Trinity College, Toronto.

[Read before the Statistical Society, 19th January, 1864.]

CONTENTS:

	PAGE		PAGE
I.—Résumé of the History of Central British America to the Year 1858 ...	82	VII.—The Canadian Emigrant Route across the Continent ...	94
II.—Action of the United States Government, the State of Minnesota, the British and Canadian Governments, and the People of Red River, up to 1863	86	VIII.—Comparison between British and United States' Routes across the Continent	96
III.—The Agricultural Capabilities of the Red River and Saskatchewan Districts	88	IX.—Communication between Canada and Central British America ...	100
IV.—Their Mineral Wealth.....	90	X.—Communication <i>via</i> Hudson Bay ...	100
<i>a.</i> Salt		XI.—No other Area suitable for extensive Settlement in British America, besides the Lake Winnipeg and Saskatchewan Districts	101
<i>b.</i> Lignite Coal		XII.—The Progress of Minnesota, Dakota, and Nebraska	102
<i>c.</i> Iron Ores		XIII.—Indian Population of Central British America	103
<i>d.</i> Bitumen or Petroleum		XIV.—General View of British America ...	103
<i>e.</i> Gold			
V.—The Winnipeg Gold Field, and the Saskatchewan Gold Field	91		
VI.—Communication with Central British America	93		
<i>a.</i> Communication <i>via</i> St. Paul			
<i>b.</i> City " " Superior			

I.—Résumé of the History of Central British America to the Year 1858.

A CENTURY and a quarter has elapsed since the French Government sent an expedition from Canada through the interior of the American continent, with a view to reach the Pacific Ocean by an overland route.

M. de la Verandère, the chief of the expedition, did not succeed in getting as far westward as the Rocky Mountains, but he and his successors constructed a fort three hundred miles west of Lake Winnipeg for the purposes of trade; and about the same time other fortified trading posts were established by the French, still further to the west, the most remote of which was situated near the junction of the north and south Saskatchewan, in long. 103° W.

Prior to this occupation of the Saskatchewan valley, the French had, successfully, attempted to reach Hudson's Bay overland, both from the St. Lawrence and Lake Superior. These expeditions were undertaken when the population of the whole of Canada was less than one-fifth part of the present population of Montreal, and, consequently, less than one-half the population of Toronto.

That the early French colonists were pre-eminently distinguished by their desire for the extension of their territory, the following extracts from the Paris documents will establish beyond doubt, and at the same time convey some idea of their activity and enterprise in the infancy of Canadian history, and also of the projects they formed, and the conceptions they entertained of the extent of the country they intended to colonize as new France, north of the great lakes, more than one hundred years ago.

As early as 1646, we read that *Sieur Bourdon*, with three Frenchmen, was sent overland from Quebec to take possession of Hudson's Bay for France. The French had already established a trade with the Indians of Hudson's Bay, and in a few years induced them to come to Quebec to barter their furs.

In 1661 the *Rev. Claude Dablon* set out overland for Hudson's Bay *viâ* the Saugenay, but he succeeded in reaching only the head waters of the Nebouka, 300 miles from Lake St. John.

In 1663 the Indians of the Bay du Nord (Hudson's Bay) returned to Quebec in further quest of Frenchmen, and *M. Davaugour* sent thither *Sieur de la Couture* with five men, who proceeded *overland* to the said bay, possession whereof he took in the King's name, noted the latitude, planted a cross, and deposited at the foot of a large tree his Majesty's arms engraved on copper, and laid between two sheets of lead, the whole being covered with some bark of trees.

In 1671 *Père Albanel* was despatched overland to Hudson's Bay by the *Intendant Talon* (*viâ* the Saugenay river); and in the same year (1671) *Sieur de St. Lusson* was sent by *M. Talon* to Sault St. Marie, where he made a treaty with "seventeen Indian nations." The *Intendant* in his report states that the place *Sieur de St. Lusson* reached is not supposed to be 300 leagues from the extremities of the countries bordering on the Vermilion or South Sea. He continues: "The countries bordering on the Western Ocean appear to be no farther from those discovered by the French, according to the calculation of the distance made from the reports of the Indians; and by the maps there does not appear to be more than 1,500 leagues of navigation remaining to Tartary, China, and Japan." Even at so early a period in the history of Canada did the French look forward to establishing communication, overland, with the "South Seas," to command the trade of Western Asia; and in another half century the French Government were so impressed with the idea of an overland route to the Pacific that they sent instructions to Quebec to have the exploration effected.

Du Chesneau writes in 1681: "They (the English) are still at Hudson's Bay, on the north, and do great damage to our fur trade."

In 1683 *M. de la Barre* writes to *M. de Seignelay*: "The English

“ of Hudson’s Bay have this year attracted many of our northern
 “ Indians, who for this reason have not come to trade to Montreal.
 “ When they learned by expresses, sent them by Du L’hut on his
 “ arrival at Missilimakinak,* that he was coming, they sent him word
 “ to come quickly, and they would unite with him to prevent all the
 “ others going thither any more. If I stop that pass (Lake Superior
 “ to James Bay), as I hope, and as it is necessary to do, as the
 “ English of that Bay excite against us the savages, whom Sieur du
 “ L’hut alone can quieten, I shall enter into arrangements with those
 “ of New York for the surrender to me of any guilty fugitives, but
 “ we are desirous to obtain an order to that effect from the Duke of
 “ York.”

And in the same year (1683) M. de la Barre writes to M. de Seignelay as follows: “ A small vessel has just arrived from Hudson’s
 “ Gulf, 200 leagues further north than the Bay. * * * It is
 “ proper that you let me know early whether the King desire to
 “ retain that post, so that it may be done, or the withdrawal of the
 “ French, for which purpose I shall dispose matters in order to aid
 “ them overland beyond Lake Superior, through Sieur du L’hut,
 “ and to send to them by sea to bring back the merchandise and
 “ peltries.”

In Governor Dongan’s Report on the State of the Province, in 1687, we find a notice of the Hudson’s Bay in the New York Colonial Manuscripts:† “ Last spring he (the Governor of Canada) sent
 “ one De la Croa with fifty soldiers and one hundred young men of
 “ Canada to the North-West Passage, where, I am certainly informed
 “ from Canada, they have taken three forts.”‡ In Mr. Nelson’s memorial about the state of the Northern Colonies of America, dated 1696, he says, “there are actually, this instant, now at
 “ Versailles, six Sagamoës, or chiefs, sent from Canada, Hudson’s
 “ Bay, and Nova Scotia, to solicit such help and assistance against
 “ us,” &c., &c.

M. de la Verandèrie was sent on an overland expedition by the desire of Count Maurepas, in the year 1738, to discover the Pacific Ocean. He set out with his party from Montreal, passed through Lake Superior, and, proceeding nearly due west, ascended the Assiniboine river, and directed his course towards the Rocky Mountains. Without reaching the Rocky Mountains, M. de la Verandèrie was obliged to abandon the prosecution of his expedition. Three hundred miles west of Lake Winnipeg, on the Assiniboine river, the French erected Fort la Reine. Three others were built further

* Michillimakinak, Green Bay, and Lake Huron.

† Documents relating to the Colonial History of the State of New York.

‡ Governor Dongan refers to Chevalier de la Troye—an account of whose expedition to Hudson’s Bay, in 1686, is contained in Charlevoix’s History.

west, the most remote of which stood on the bank of the River Paskoyac.*

Mackenzie speaks of Canadian missionaries who penetrated "2,800 miles from the civilized parts of the continent long before the cession of the country to the English in 1763!"

The names of several lakes and prominent hill ranges date from the occupation of the country west of Lake Winnipeg by the French, prior to the conquest. Such as Dauphin Lake, Dauphin Mountains, Fort Bourbon, on the Saskatchewan, near the west end of Cedar Lake. The most remote of the French settlements on the Saskatchewan appears to have been "at Nipawee, in lat. $53\frac{1}{2}$, "long. 103."†

When we consider these great enterprises in connection with the population of Canada at the time, we cannot fail to be astonished at the energy of the French colonists, and the desire they exhibited to extend their empire even to the frozen north, and to secure the overland trade with Hudson's Bay and the far unknown west—even to "South Seas."

During the period when they were undertaken, the population of Canada, from 1666 to 1738,‡ was as follows:—

1666.....	{	3,418 total population. 1,344 men bearing arms.
'67.....	{	4,312 total population. 1,566 men capable of bearing arms.
'68.....	{	5,870 total population. 2,000 men capable of bearing arms.
'79.....	{	9,400 total population.
'85.....	{	17,100 French inhabitants, men, women, and children. 3,000 men capable of bearing arms.
1738.....	{	45,000 population: the year M. de la Verandère was sent overland to discover the Pacific Ocean.

At this period Upper Canada and a large portion of Lower Canada was a wilderness, and yet the French sought to extend their territorial jurisdiction to the shores of Hudson's Bay; and some years later had visions of grasping the Indian and China trade from the shores of the Pacific, which they hoped to reach overland from Canada.

The most important particulars of the history of Central British America, from the date of the formation of the North-West Company

* Foot note to New York Colonial Manuscripts; Paris Doc.

† The name "Nipawee" is perhaps the same as Nepowewin or "The Standing Place," the present name of the mission opposite Fort à la Corne. Before the conquest the French had settlements at Dauphin Lake, the Pasquia (near Carrot river or Root river), and at Nipawi, "where they had agricultural instruments and wheel carriages, marks of both being found about the settlements."—Mackenzie's *Voyages*."

‡ Paris Documents.

of Montreal in 1783 to its union with the Hudson's Bay Company in 1821, are related in the Blue Book containing the Report of the Committee of the House of Commons on the Hudson's Bay Company's Affairs, published in 1858, and in other accessible documents. It is also well known that partially successful efforts were made by Lord Selkirk to establish an immigrant agricultural colony on the Red River of the North, which, in the year 1857, numbered 7,000 souls, by the natural increase of the population and the settlement of the servants of the Company. Up to this period, however, namely, the appearance of the Report of the Committee of the House of Commons, in 1858, no other future was admitted to be possible for this vast central region of British America than that of a preserve for the interests of the fur trade.

II.—*Action of the United States' Government, the State of Minnesota, the British and Canadian Governments, and the People of Red River up to 1863.*

In the winter of 1858-59 the machinery, furniture, and timbers of a steamer were transported by American citizens from Crow Wing, on the Upper Mississippi, to Fort Abercrombie, on the Red River of the North, where the vessel was built; and in 1859, the first steamer reached Fort Garry.

Eighteen months after the publication of the Parliamentary inquiry, and the preliminary reports of the British and Canadian Exploring Expeditions of 1857 and 1858, the New York Chamber of Commerce turned its attention to Central British America, and published a brief description, slightly coloured, of the advantages it possessed. An extract from this report is embodied in an executive document recently published by the United States' Government, entitled "Relations between the United States and North-West "British America." The first voyage of the American steamer was made in June, 1859, from Fort Abercrombie to Fort Garry. Fort Abercrombie is about 200 miles north-west of St. Paul. In the executive document, to which allusion has just been made, the following brief résumé is given of what has been done in the United States with respect to Central British America. "This incident" the voyage of the steamer to Fort Garry, "was the legitimate "sequel to events in Minnesota which had transpired during a "period of ten years. Organized as a territory in 1849, a single "decade had brought the population, the resources, and the public "recognition of an American State. A railroad system connecting "the lines of the Lake States and provinces at La Crosse, with the "international frontier on the Red River at Pembina, was not only "projected, but had secured in aid of its construction, a grant by "the Congress of the United States of 3,840 acres a mile, and a

“loan of state credit to the amount of 20,000 dollars a mile, not exceeding an aggregate of 5,000,000 dollars. Different sections of this important extension of the Canadian and American railways were under contract and in process of construction. In addition the land surveys of the Federal Government had reached the navigable channel of Red River; and the line of frontier settlement, attended by a weekly mail, had advanced to the same point. Thus the Government of the United States, no less than the people and authorities of Minnesota, were represented in the north-west movement.

“The foregoing statement of the condition of things at the beginning of 1860 is not materially changed. The Palmerston Ministry has not prosecuted to effect the masterly and comprehensive policy of Sir E. B. Lytton. The commerce of Minnesota with Selkirk and the Saskatchewan valley has increased, being double in 1861 what was transported in 1860. Selkirk settlement is still unrecognized as a province of England, its population not materially enlarged, and mostly by American emigrants.”*

The resolution of the House of Representatives of the 20th May, 1862, is well worthy of attention. It is as follows:—

“*Resolved*,—That the Secretary of the Treasury be, and he hereby is requested, to communicate to this house any information in the possession of his department which he may judge to be in a form suitable for the consideration of the House of Representatives upon the relations between the United States and North-West British America, particularly the central districts of the Red River of the North and the Saskatchewan.”

Mr. Chase replies,—“In compliance with the spirit and terms of this resolution, I have caused to be prepared an abstract of the reports of James W. Taylor, Esq., special agent of the Treasury Department, and of other papers on file relating to the subject, which abstract, together with the papers referred to, I have the honour to transmit herewith.”

These papers, occupying eighty-seven pages of print in octavo form, close with the recommendation, emanating from Mr. Taylor, that “it would be an instance of well directed legislation for the Congress of the United States and the Parliament of England to unite in a liberal subsidy, say of \$200,000 by each government, for the transmission of a weekly mail from the limits of navigation on the Mississippi river, and the British coast of Lake Superior by an international route to the centres of the gold districts of British Columbia and Washington Territory.” “Similar reciprocity of action has led to unity of interests and sentiments on the opposite coasts of the

* “Relations between the United States and North-West British America.” Executive Document, House of Representatives, 1862.

“ St. Lawrence and the Great Lakes, itself an effective bond of peace. Why not disarm the whole frontier of the North by constant multiplication of such ties and guarantees of international concord ? ”

In Canada, the charter of the North-West Transit Company has not yet expired, and it is in contemplation to obtain a renewal with increased powers during the approaching session of the Provincial Parliament.

The magnificent and eminently patriotic plans of the New Hudson's Bay Company, as described in their prospectus, for the construction of a telegraph and the establishment of a postal communication across the continent within the limits of British America, and to open for settlement the rich agricultural areas drained by Red River, the Assiniboine, and the Saskatchewan are well known here, and require no reference at present.

In 1863, the people of Red River Settlement presented a “ Memorial to the British and Canadian Governments,” praying for the opening of communication between Canada and British Columbia entirely within British territory. This memorial, with remarks on the colonization of Central British America, and the establishment of a “ great territorial road,” by Mr. Sandford Fleming, C.E., was printed by order of the Legislative Assembly of Canada in 1863.

It will thus be seen that great projects relating to Central British America are proposed by the Congress of the United States, the State Government of Minnesota, the Canadian Government, and the Hudson's Bay Company, and it now remains to consider the natural resources of that distant region which it is intended to bring within reach of the great commercial centres.

III.—*The Agricultural Capabilities of the Red River and Saskatchewan Districts.*

In estimating the agricultural capabilities of the basin of Lake Winnipeg, I bring to bear on the subject the result of personal observation from the head waters of the Winnipeg river, 104 miles west of Lake Superior, to the elbow of the south branch of the Saskatchewan (long. 108 W.) a distance, measured along the centre of the fertile belt of land which crosses the basin of the Winnipeg from the Lake of the Woods to the foot of the Rocky Mountains, of about 750 miles. West of the forks of the Saskatchewan to the Rocky Mountains, about 300 miles, I have based my estimate upon the reports of Captain Palliser and his associates and upon other reliable sources. A residence of many years in Canada has afforded me, I venture to believe, sufficient experience to admit of my forming a tolerably correct opinion respecting the general features of soil, its fitness for cultivation, and the amount of labour required to make its cultivation remunerative. But

when I say that there exists within the basin of Lake Winnipeg an area of cultivable land greater than that which can be found within the province of Canada, I have in view the expenditure over a considerable area of an equal amount of manual labour, in one form or another, to bring it into a proper state for cultivation; the labour in Canada being devoted to clearing away the forests, in the basin of Lake Winnipeg to drainage. But there are many thousand square miles in the fertile belt of Central British America fitted for the plough in their present natural condition. Those great advantages which belong to a wide extent of immediately available prairie lands of the richest description, which have led to the rapid peopling of Illinois State, belong also to the Winnipeg and Saskatchewan districts, and the climate of those districts is in no way inferior to that of the central portions of Canada, where winter wheat is successfully grown.*

The agricultural capabilities of the basin of Lake Winnipeg may be summed up as follows:—

	Acres.
On the route from Fort William, Lake Superior, to the Lake of the Woods, including the valley of Rainy river	200,000
The fertile belt, stretching from the Lake of the Woods to the flanks of the Rocky Mountains, and as far north as the 54th parallel, on the Athabaska, west of McLeod's river (80,000 square miles)	51,200,000
Isolated areas in the prairie plateau, south of the Assiniboine	2,000,000
Isolated areas in the great plain plateau, the extension northwards of the great American desert, and in the valleys of the rivers flowing through it	1,000,000
Total area of land available for agricultural purposes	54,400,000
Approximate area suitable for grazing purposes	30,000,000
Total approximate area fitted for the abode of civilized man	84,400,000
Approximate area of the basin of Lake Winnipeg, within British territory	199,680,000
Area fitted for the abode of civilized man	84,400,000
Desert area unsuitable for the permanent abode of man	115,280,000

Comparing this extent of surface with Canada, we arrive at the following results:—

	Acres.
Area of the province of Canada (340,000 square miles)	217,600,000
„ occupied by the sedimentary rocks (80,000 square miles)	51,200,000
„ „ crystalline rocks	166,400,000
If we suppose that one-sixth of the area occupied by the crystalline rocks is capable of cultivation, as regards soil and climate (an estimate probably in excess), the total amount of land in Canada available for the purpose of settlement will be approximately	78,900,000
Showing an excess of land fitted for the permanent abode of man, in favour of the basin of Lake Winnipeg over the province of Canada, of	5,500,000

* Winter wheat has been grown at Red River settlement with success, 1862.

In Upper Canada, with a population of 1,396,091, there are 13,354,907 acres held by proprietors, of which only 6,052,619 acres are under cultivation, cropped, or in pasture. If the whole quantity of land fit for cultivation were occupied in the same proportion, the population of Canada would exceed eighteen millions. At the same ratio of inhabitants to cultivable and grazing land, the basin of Lake Winnipeg would sustain a population exceeding 19,000,000, or leaving out of consideration the land suitable to grazing purposes, its capabilities would be adapted to support 12,000,000 people. If European countries, such as France and Great Britain, were taken as the standard of comparison, or even many of the States of the American Union, the number would be vastly greater.

With reference to the climate of a large part of the Saskatchewan district, M. Bourgeau, the accomplished botanist who accompanied Captain Palliser's expedition, says :—" In effect, the few attempts at " the culture of the cereals already made in the vicinity of the " Hudson's Bay Company's trading ports demonstrate by their " success how easy it would be to obtain products sufficiently abundant to largely remunerate the efforts of the agriculturists. *There,* " in order to put the land under cultivation, it would be necessary " only to till the better portions of the soil. The prairies offer " natural pasturage as favourable for the maintenance of numerous " herds *as if they had been artificially created.*"

IV.—*Their Mineral Wealth.*

I now proceed to glance at the mineral wealth of this central region of British America. The little that is known of it already establishes the great fact that within 100 miles of the entire length of Lake Winnipeg, on the west side, there are salt springs sufficient to produce as much of that important material, at a very small cost, as will be required for generations to come. Iron ores of the best description for common purposes are distributed over vast areas adjacent to workable beds of lignite coal. Some of the beds of coal are 12 feet in thickness, and have been recognized in the western part of the basin of Lake Winnipeg over several degrees of latitude and longitude.

It is important to bear in mind that with the lignite coal the vast deposits of clay iron-stone are associated. These extend much further east than the lignite layers, which have been removed by denudation, and form a very peculiar and important feature in the rocks west and south of the Assiniboine, after it makes its north-westerly bend.*

* The vast deposits of iron ore belonging to the cretaceous series of the basin of Lake Winnipeg, acquire especial importance in consequence of their being associated with equally widely distributed deposits of lignite, and are found not very

A large part of the region drained by the north and south branches of the Saskatchewan is underlaid by a variety of coal or lignite. On the North Saskatchewan coal occurs below Edmonton in workable seams.

A section of the river bank in that neighbourhood shows in a vertical space of 60 feet three seams of lignite; the first, 1 foot thick, the second, 2 feet, and the third, 6 feet thick. Dr. Hector, who made the section, states that the 6-foot seam is pure and compact.* Fifteen miles below the Brazeau river, a large tributary to the North Saskatchewan from the west, the lignite bearing strata again come into view, and from this point they were traced to the foot of the Rocky Mountains. On the Red Deer River the lignite formation was observed at various points. It forms beds of great thickness; one group of seams measured 20 feet, "of which 12 feet consisted of "pure compact coal."—(Dr. Hector.) These coal beds were traced for ten miles on Red Deer River. A great lignite formation of cretaceous age, containing valuable beds of coal, has a very extensive development on the upper waters of the North and South Saskatchewan, the Missouri, and far to the north in the valley of the Mackenzie. Colonel Lefroy observed this lignite on Peace River, and Dr. Hector recognized it on Smoking River, a tributary of Peace River, also on the Athabaska, McLeod River and Pembina River, all to the north of the Saskatchewan, "thus proving the range of this "formation over a slope rising from 500 to 2,300 feet above the sea, "and yet preserving on the whole the same characters, and showing "no evidence of recent local disturbance beyond the gentle uplift "which has effected this inclination."†

V.—*The Winnipeg Gold Field and the Saskatchewan Gold Field.*

I now approach a subject of especial interest, and I may be pardoned if I dwell upon it with some degree of minuteness, and an appearance of individual interest in the distribution and probable extent of the gold-bearing rocks of the Winnipeg basin. In 1857, on my return from the Red River Settlements, I brought with me a small nugget and some particles of gold, which were given to me by a half-breed, who stated that they had been found in the bed of Sturgeon creek, a small tributary of the Assiniboine.

I submitted these specimens of gold to the proper authorities in Canada, stating, however, at the time that I had no geological grounds for the belief that they were found, as alleged, in the vicinity of Fort Garry.

remote from apparently inexhaustible stores of bitumen and petroleum (on Clear Water River), which as a fuel adapted to raising elevated temperatures in a regenerating furnace has no equal.

* "Proceedings of the Geological Society, 1861," p. 421.

† *Ibid.*, p. 420.

On my return to Red River, in 1858, in charge of the Assiniboine and Saskatchewan expedition, I had the possible existence of gold-bearing rocks near Lake Winnipeg in view, and on the 28th September of the same year quartz veins penetrating palæozoic rocks (Silurian) were discovered by me, forming islands in St. Martin's lake, some thirty miles west of Lake Winnipeg. Struck with their importance, I made a short but ineffectual search for gold, the season being too far advanced to admit of a prolonged investigation. I named these islands St. Martin's Rocks, and gave a tolerably minute description of them in my report, which was first published in Canada in 1859, again in London in 1860, in the form of a Blue Book, and also embodied in my narrative of the Canadian expedition, published by Longman, in the same year.

In 1862 several members of the Canadian emigrant party, which left Fort Garry in June, 150 strong, traversed the valley of the Saskatchewan, crossed the Rocky Mountains by the Leather Pass, descended the Frazer, and reached New Westminster in the autumn of the same year, discovered gold in fine particles on the Assiniboine, the Qu'appelle river, near the Touchwood hills, on numerous tributaries of the North Saskatchewan, and in the flats of the great river itself.

Having received information respecting these discoveries, on which I thought reliance could be placed, I drew up a paper with illustrative maps, in June last, and submitted it to a member of the Canadian Government, explaining to him verbally my views respecting the origin of the gold on the Assiniboine river.

In July last I was informed by a gentleman holding a high and responsible office in the Hudson Bay Company, and who had just arrived from Fort Garry, that gold in *scales* had been discovered near Fort Ellice, a few miles from the spot where it had been found in fine particles by the Canadian emigrants. This additional evidence from an unimpeachable authority led me to append a note to the paper previously prepared, to the effect that I considered the discovery of gold in scales, near Fort Ellice, afforded complete scientific proof that there existed an eastern or Winnipeg gold-bearing area, wholly distinct from the Rocky Mountain gold fields; that the St. Martin's Rocks formed part of this area, and that it extended in a north-westerly direction towards Lake Athabaska, in the form of a narrow belt of intrusive gold-bearing quartz veins penetrating Silurian and probably also Devonian rocks, and resembling, in some important particulars, the auriferous region in Victoria, as described by the Government geologist of that colony. It is proper to state that the gold hitherto found over wide areas in the basin of Lake Winnipeg has been obtained solely from the drift, but the drift covering the valley of the Saskatchewan, west of Lake Winnipeg, even as far as

100 miles from the Rocky Mountains,* has travelled in a south-westerly direction, and was derived originally from the eastern side of the Lake Winnipeg basin.

Some of the gold found at Edmonton, also in many of the tributaries of the North Saskatchewan, has a Rocky Mountain origin; and auriferous alluvium on the banks of the rivers coming from that range penetrates and overlaps the auriferous drift derived from the Winnipeg gold field. Already numbers of young men have left the Red River Settlements and established themselves near Edmonton, where I have been informed, from a reliable private source, they were obtaining, in July last, \$15 a-day in fine gold, by simply washing the alluvial mud of the River Saskatchewan.

The existence of a Winnipeg gold field acquires particular importance at the present time for several reasons, prominent among which is the certainty of American progress, westward of the 100th degree of longitude, being arrested by conditions of soil and climate, and its diversion northwards, towards and into the basin of Lake Winnipeg.

VI.—*Communication with Central British America.*

The questions which relate to the facilities for communication between the Lake Winnipeg basin and this country, through British or American territory, and the extension of that communication across the Continent to the Pacific, may now be discussed.

It has already been stated that, with the single exception of 200 miles of road traversed by well appointed stage coaches, the communication from Liverpool to Fort Garry, or indeed the grand falls of the Saskatchewan, can be made by steam.

The successive steps in this route are as follows:—

	Days.
1. Liverpool to Quebec, steamer	10
2. Quebec to La Crosse, railway	3
3. La Crosse to St. Paul, steamer	1½
4. St. Paul to Fort Abercrombie, stages	3½
5. Fort Abercrombie to Fort Garry, steamer	4
	<hr/>
	22
	<hr/>

The following route is also practicable:—

1. Liverpool to Superior City by steamer.
2. Superior City to Fort Abercrombie, road.
3. Fort Abercrombie to Fort Garry, steamer.

The present difficulty of this route is the nature of the road between Superior City and Crow Wing, which, being cut through a

* Dr. Hector.

wooded country, is still, in the language of the country, rather "rough" as yet.

The next link in a route across the Continent is from Fort Garry to the New Westminster, in British Columbia. And in order to illustrate the singular and wholly unexpected topographical facilities which exist in the basin of Lake Winnipeg, the Rocky Mountains, and British Columbia for commercial intercourse, I shall venture to describe, in as brief a manner as possible, the journey of the Canadian emigrants of 1862 through that vast extent of country. My brother, Mr William Hind, who accompanied me on an exploration into the interior of the Labrador Peninsula in 1861, went with this party for the express purpose of sketching the passes through the Rocky Mountains and all natural features of interest on the line of route.

VII.—*The Canadian Emigrant Route across the Continent.*

The Canadian emigrant party assembled at Fort Garry in June, 1862, travelling thither by Detroit, La Crosse, St. Paul, and Fort Abercrombie, by rail, stage, and steamer. At Fort Garry they separated into two parties; the first division contained about one hundred emigrants, the second division, sixty-five persons in all. The first party took the northern route, by Carlton to Edmonton, the second, the southern trail. At Edmonton they all changed their carts for horses and oxen, and went thence in a straight line to the Leather Pass (lat. 54°), through which they took 130 oxen and about 70 horses. They suddenly found themselves on the head waters of the Frazer river, and so gentle was the ascent that the only means they had of knowing they had passed the dividing ridge of the Rocky Mountains was by unexpectedly observing the waters of the rivers flowing to the westward. When in the mountains, they killed a few oxen for provisions; others were sold to the Indians at Tête Jaune Cache, on the Frazer, and others were *rafted* down the Frazer to the forks of the Quesnelle.

At Tête Jaune Cache a portion of the party separated from the rest, and, with fourteen horses, went across the country, by an old well-worn trail, to Thompson's River, and thus succeeded in taking their horses from Fort Garry, through the Rocky Mountains, through a supposed impassible part of British Columbia, to the wintering station on Thompson's River for the pack animals of the British Columbia gold seekers. With this party of more than 150 people were a woman and three little children. The little children were well cared for, for the emigrants took a cow with them, and these infant travellers were supplied with milk all the way on their long journey to the Leather Pass in the Rocky Mountains. I look upon the successful journey of the Canadian emigrants of 1862, across the

Continent, as an event in the history of Central British America of unexampled importance. It cannot fail to open the eyes of all thinking men to the singular natural features of the country which formed the scene of this remarkable journey. Probably there is no other continuous stretch of country in the world, exceeding 1,600 miles in length, and wholly in a state of nature, which it would be possible for 150 people, including a woman and three children, to traverse during a single short season, and successfully, and, indeed, easily overcome such apparently formidable obstacles as the Rocky Mountains have been supposed to present.

The Leather or Miette Pass lies in latitude 54° , and has long been known to the employés of the Hudson's Bay Company, and is called by them the "Old Columbia Trail" or "Jasper Pass." It will be observed that it forms an immediate and direct connection with the great artery of British Columbia, namely, the Frazer river. The other passes to the south connect with the Columbia river, which flows for many hundred miles through Washington territory. It will not fail to be noticed, too, that the existence of this route, *viâ* the Leather Pass, has only very recently appeared on published maps. It is shown on Arrowsmith's map of British Columbia, published in 1860, but the success with which its long established connection with the Frazer was concealed by the late Hudson's Bay Company is a singular instance of the unity of purpose which has pervaded all the actions of that powerful corporation, during their long tenure of absolute control over a portion of British America, containing more land suitable for the abode of man than the province of Canada itself, and which has already cost in its defence from aggression many millions of money and many thousands of lives. It seems remarkable that the Leather Pass, and its easy connection with the Frazer river, escaped the attention of the exploring party sent by the British Government, under Captain Palliser, in 1857, 1858, and 1859. If the existence of this unobstructed communication between the Athabaska valley and British Columbia had been made known to the world as one of the results of that expedition, probably long ere this the British Government would have taken measures to establish a separate Government in Central British America, and open a communication across the Continent through British territory. Dr. Hector actually passed the "Old Columbia Trail," but neither his guides nor the people at St. Ann's or Edmonton appear to have informed him of its existence. Fortunately the Leather Pass has now been traversed by men, a woman, children, and numerous oxen and horses. The Frazer river has been safely descended for 400 miles from its source, in canoes and on rafts, by a very numerous party, and it has been *ascended* in a boat from Cariboo to the Tête Jaune Cêche; and from this last-

named place there is a well-known trail for horses to the Thompson's River, and thence to New Westminster, which has also been traversed by Canadian emigrants with horses; and more recently, according to Victoria papers, by Lord Milton, with thirteen horses. The difficulties of the Rocky Mountains have, in great part, melted away, and the "impossibilities" of the overland route have vanished, just as the "uninhabitable deserts and swamps" of the Saskatchewan have given place to boundless fertile prairies, which will probably become—even in our generation—the seat of an enterprising and prosperous people.

VIII.—*Comparison between British and United States Routes across the Continent.*

Not only is the track of the Canadian emigrants suggestive as to the nature of the country they traversed so easily, but in comparison with the explored routes for a Pacific railway within the limits of the United States it assumes a new importance. The present President of the Southern States, when Mr. Secretary Davis, summed up the comparisons of the different routes in the United States, as regards the character of the country they traverse. The following is an abbreviation of the summary:—

	Miles.
Route near the 47th and 49th parallels, from St. Paul to } Vancouver.....	1,864
Number of miles through arable land	374
Number of miles through land generally uncultivable, } arable soil being found in small areas	1,490

The greatest number of miles of route through arable land on any one of the lines surveyed is 670 miles, in a distance of 2,290 miles. The least number of miles of route through generally uncultivable soil is 1,210, on a line of 1,618 miles in length, near the 32nd parallel.

From the Lake of the Woods, or from Pembina, a line in British territory instead of passing through a desert incapable of supporting human life, would traverse a fertile belt of country, averaging 100 miles in breadth, fully able to sustain five times as many people as Canada now possesses, and leading directly towards the lowest and by far the most facile pass in the Rocky Mountains.

The arid region of the Missouri valley commences west of the 100th degree of longitude, but the 100th degree of longitude divides the United States into two nearly equal parts on the 40th parallel of latitude. The eastern half is the present fertile and peopled part of the country. The western half is a comparative desert all the way to the Pacific.* It is in comparison with this immense desert that the

* The cause of the aridity and unfitness for settlement of fully one-third of the United States has been ably discussed by distinguished meteorologists. This

fertile belt at the edge of the woods, stretching in the Saskatchewan valley from the Lake of the Woods to the Rocky Mountains, stands out in such surprising contrast. The cause of this exceptional character is, in great part, due to the drift deposits which cover the fertile belt. There is, therefore, a geological as well as a climatological reason. Sixty thousand square miles of arable land in Central British America mark out the true pathway across the continent, which alone is capable of sustaining an efficient means of communication, whether in the form of a stage road or ultimately of a railway, by the growth of a local population. But the favourable comparison does not rest here. The mountain region,

remarkable feature, extending over a portion of the American continent within the limits of the United States of more than 1,000,000 square miles in area, is highly important in relation to the valley of the south branch of the Saskatchewan, to a large part of which the same peculiarity belongs. The physical geography of the arid region in the United States has been very admirably described by Dr. Joseph Henry.*

"The general character of the soil between the Mississippi river and the Atlantic is that of great fertility, and as a whole, in its natural condition, with some exceptions at the west, is well supplied with timber. The portion also on the western side of the Mississippi, as far as the 98th meridian, including the States of Texas, Louisiana, Arkansas, Missouri, Iowa, and Minnesota, and portions of the territory of Kansas and Nebraska, are fertile, though abounding in prairies and subject occasionally to droughts. But the whole space to the west, between the 98th meridian and the Rocky Mountains, denominated the Great American plains, is a barren waste, over which the eye may roam to the extent of the visible horizon with scarcely an object to break the monotony.

"From the Rocky Mountains to the Pacific, with the exception of the rich but narrow belt along the ocean, the country may also be considered, in comparison with other portions of the United States, a wilderness unfitted for the uses of the husbandman; although in some of the mountain valleys, as at Salt lake, by means of irrigation, a precarious supply of food may be obtained sufficient to sustain a considerable population, provided they can be induced to submit to privations from which American citizens generally would shrink. The portions of the mountain system further south are equally inhospitable, though they have been represented to be of a different character. In traversing this region, whole days are frequently passed without meeting a rivulet or spring of water to slake the thirst of the weary traveller.

"We have stated that the entire region west of the 98th degree of west longitude, with the exception of a small portion of Western Texas and the narrow border along the Pacific, is a country of comparatively little value to the agriculturist; and, perhaps, it will astonish the reader if we direct his attention to the fact that this line, which passes southward from Lake Winnipeg to the Gulf of Mexico, will divide the whole surface of the United States into two nearly equal parts. This statement, when fully appreciated, will serve to dissipate some of the dreams which have been considered as realities as to the destiny of the western part of the North American continent. Truth, however, transcends even the laudable feelings of pride of country; and in order properly to direct the policy of this great confederacy, it is necessary to be well acquainted with the theatre on which its future history is to be enacted, and by whose character it will mainly be shaped."

* "Meteorology in its Connection with Agriculture," by Professor Joseph Henry, Secretary of the Smithsonian Institution.

which offers such a difficult barrier to communication between the Pacific and the valley of the Mississippi, possesses peculiarities in British America which are in themselves of a very striking character, and quite sufficient to establish the line of route, cutting diagonally the 50th, 51st, 52nd and 53rd parallels, as far superior in point of physical conformation to any other lines of route which have been explored in British America or the United States.*

The candid opinion of Professor Joseph Henry regarding the adaptation of a large portion of the United States for settlement is confirmed and strengthened by the following excellent summary, from the pen of Major Emory of the United States and Mexican Boundary Commission. It will at once occur to the reader that a knowledge of these facts gives great additional value to the truly fertile valleys of Red River, the Assinniboine, part of the Qu'appelle, and portions of the south and north branches of the Saskatchewan. It determines also the direction in which efforts should be made to people this great wilderness, and guide the progress of settlement in such a manner as will render the country available for that grand desideratum, a route across the continent :—

“ In the fanciful and exaggerated description given by many of the character of the western half of the continent, some have no doubt been influenced by a

* Table of comparison between the different passes in the Rocky Mountains, in the United States and in British territory, north of latitude 38° :—

<i>United States—</i>		Altitude of Pass. Feet.
Surveyed route between the 38th and 39th parallels of latitude		10,032
Route between the 41st and 42nd parallels.....		8,373
„ 47th and 49th „		6,044
<i>British territory—</i>		
Kananaski Pass, from the South Saskatchewan to the Kootanie } river		5,985
Kicking Horse Pass, from South Saskatchewan to the Columbia		5,420
Vermillion Pass, from the South Saskatchewan to the Kootanie } River		4,944
“ Old Columbia Trail,” or Leather Pass, from the Athabaska } to the Frazer—the Canadian emigrant route—probably below }		4,500

The breadth of country forming a continuous mountain region is far greater in the United States than in British America. The United States is crossed by three great systems of mountains, extending generally from north to south. The first system, beginning with the Sierra Madre, and terminating in the Black Hills of Nebraska territory, is partially gorged by the Rio Grande, completely cut through by the North Platte and the Sweet Water Rivers, and turned by the Missouri. It does not extend into British America. The total breadth of mountainous country, in the proper acceptance of the term, within the limits of the United States, varies from 500 to 900 miles. In British Columbia, the distance is not more than 380 miles from the Leather Portage to the Pacific; and the distance, in an air line from the Leather Portage to the extremity of Belhoula inlet, the possible terminus, of a route, does not exceed 400 miles.

desire to favour particular routes of travel for the emigrants to follow ; others by a desire to commend themselves to the political favour of those interested in the settlement and sale of the lands ; but much the greater portion by estimating the soil alone, which is generally good, without giving due weight to the infrequency of rains, or the absence of the necessary humidity in the atmosphere, to produce a profitable vegetation. But be the motive what it may, the influence has been equally unfortunate by directing legislation and the military occupation of the country, as if it were susceptible of continuous settlement from the peaks of the Alleghannies to the shores of the Pacific.

“ Hypothetical geography has proceeded far enough in the United States. In no country has it been carried to such an extent, or been attended with more disastrous consequences. This pernicious system was commenced under the eminent auspices of Baron Humboldt, who, from a few excursions into Mexico, attempted to figure the whole North American continent. It has been followed by individuals to carry out objects of their own. In this way it has come to pass that, with no other evidence than that furnished by a party of persons travelling on mule back, at the top of their speed, across the continent, the opinion of the country has been held in suspense upon the subject of the proper route for a railway, and even a preference created in the public mind in favour of a route which actual survey has demonstrated to be the most impracticable of all the routes between the 49th and 32nd parallels of latitude. On the same kind of unsubstantial information, maps of the whole continent have been produced and engraved in the highest style of art, and sent forth to receive the patronage of Congress, and the applause of geographical societies at home and abroad, while the substantial contributors to accurate geography have seen their works pilfered and distorted, and themselves overlooked and forgotten. * * *

“ The plains or basins which I have described as occurring in the mountain system, are not the great plains of North America which are referred to so often in the newspaper literature of the day, in the expressions, ‘ News from the Plains,’ ‘ Indian Depredations on the Plains,’ &c.

“ The term ‘ plains,’ is applied to the extensive inclined surface reaching from the base of the Rocky Mountains to the shores of the Gulf of Mexico and the valley of the Mississippi, and form a feature in the geography of the western country as notable as any other. Except on the borders of the streams which traverse the plains in their course to the Valley of the Mississippi, scarcely anything exists deserving the name of vegetation. The soil is composed of disintegrated rocks, covered by a loam an inch or two in thickness, which is composed of the exuvæ of animals and decayed vegetable matter.

“ The growth on them is principally a short but nutritious grass, called buffalo grass (*Sysleria dactaloides*). A narrow strip of alluvial soil, supporting a coarse grass and a few cotton-wood trees, marks the line of the watercourses, which are themselves sufficiently few and far between.

“ Whatever may be said to the contrary, these plains west of the 100th meridian are wholly unsuceptible of sustaining an agricultural population, until you reach sufficiently far south to encounter the rains from the tropics.

“ The precise limits of these rains I am not prepared to give, but think the Red River (of Louisiana) is, perhaps, as far north as they extend. South of that river the plains are covered with grass of larger and more vigorous growth. That which is most widely spread over the face of the country is the grama or mezquite grass, of which there are many varieties. This is incomparably the most nutritious grass known.”*

* “ ‘ Report on the United States and Mexican Boundary Survey, made under the direction of the Secretary of the Interior,’ by William H. Emory, Major First Cavalry and United States’ Commissioner. Washington, 1846, pp. 43—47.

IX.—*Communication between Canada and Central British America.*

In Canada we are separated from the fertile part of Central British America by six degrees of longitude, which must be traversed before we can reach the edge of the fertile belt. This barrier has frequently been upheld as an insuperable objection to a practicable commercial communication between Canada and Central British America, in the absence of correct knowledge of the physical features of the country. The utmost length of the barrier which requires the construction of a road scarcely exceeds 200 miles. From its western extremity there is an unobstructed navigation, with but one break, to the edge of the fertile prairies of Central British America *viâ* Rainy River and the Lake of the Woods; and its eastern extremity is connected uninterruptedly with the sea by the great lakes and the St. Lawrence. The highest point over which the road from Lake Superior to the northern indent of Rainy Lake must pass is not 900 feet above Lake Superior; and for the first 30 miles it would traverse a country susceptible of tillage for several miles on either side, and part of it already occupied by settlers. Then follows a sudden rise, marked by the great drift bank of Dog Lake, which forms the eastern limit of a drift-covered country stretching in a north-east and south-west direction, and having a breadth of about 90 miles where the road would cross it. This accumulation of drift covers the height of land to a depth certainly exceeding 150 feet, as shown by the hills at the summit level at Prairie Portage, 885 feet above Lake Superior, and the highest point on the line of road. There are no serious physical impediments to overcome between Lake Superior and the northern indent of Rainy Lake, either for a waggon road or a railway; and this short link of 200 miles completed, the distance between Fort William on Lake Superior and the commencement of the arable prairies of the valley of Red River would be reduced to 200 miles of road or railroad, and 180 miles of steam navigation. Here, then, we see no formidable impediments, which an impression derived from the custom of traversing the country in canoes through the rocky channels of rapid rivers or hill-embosomed lakes had created in the minds of the few who have traversed that region;—impressions which have been too readily accepted by the public at a time when no particular commercial interests were at stake, except those of the fur trade, and when a policy diametrically opposed to that now entertained by the existing Hudson's Bay Company was pursued with singular success by their predecessors.

X.—*Communication viâ Hudson's Bay.*

In contemplating the future of Central British America one important feature appears to be neglected, if not entirely overlooked.

While Lake Winnipeg is 2,500 miles from the sea board of the Gulf of St. Lawrence, and lies exactly in the centre of the American continent under the 51st parallel, its northern extremity is only 380 miles from the tide waters of Hudson's Bay.

The mouth of the Saskatchewan is as near to the open sea as Fort Garry is to the western extremity of Lake Superior. The passage from Norway House, at the northern extremity of Lake Winnipeg, to Hudson's Bay is made in nine days with loaded boats. It is not unreasonable to suppose that by the introduction of tramways over the portages the journey may be made in four days, thus bringing Lake Winnipeg within four days of the sea, yet the nature of the communication now followed is such that it would not admit of vessels much larger than freighters' boats being employed. The navigation of Hudson's Bay for sailing vessels is safe for a period not exceeding six weeks—for steamers it may be double that time. Hitherto the mode of communication adopted by the fur traders between Norway House and Hudson's Bay has been sufficient for the exigencies of the fur trade; it is not at all improbable that more easy means of communication with the sea board exists than those which are now pursued. Under any circumstances it is a fact of the highest importance that Lake Winnipeg is actually within a week's journey of the ocean, over a natural road by which troops have already entered and departed from Central British America. It is more than probable that whenever the necessity arises, the communication between Lake Winnipeg and Hudson's Bay, and thence to the Atlantic, by the aid of steamers, will be made easy and speedy for at least three months in the year.

The outlet by which the waters of the Saskatchewan and Lake Winnipeg reach the sea is Nelson River. The chief reason which induces the Hudson's Bay Company to send their cargoes of furs to York Factory by Hayes River is stated to be the difficulties and dangers of the tracking ground on the banks of Nelson River, arising from impending masses of ice on the precipitous banks. The head of tide-water in Nelson River may yet become the seat of the Archangel of Central British America, and the great and ancient Russian northern port—at one time the sole outlet of that vast empire—find its parallel in Hudson's Bay.

XI.—No other Area suitable for Extensive Settlement in British America besides the Lake Winnipeg and Saskatchewan Districts.

Let it be observed that one great fact can be no longer overlooked, viz., that there is no other unoccupied part of North America, "whatever may be said to the contrary," other than the Lake Winnipeg and the Saskatchewan districts, where the establishment and growth of a new nation is possible. The same aridity

which renders the United States a desert west of the 100th degree of longitude converts many of their great rivers, so prominently marked on the maps, into detached ponds during the summer season,* while the Saskatchewan, which flows from west to east across the basin of Lake Winnipeg, is navigable far above Carlton during six weeks in the year for steamers of shallow draught; in spring and autumn it is not navigable further than Carlton. It is important to bear in mind that the Saskatchewan attains its maximum in July, and before and after that month its waters are considerably lower than during its "summer rise." This fact will account for the difficulties in navigating the Saskatchewan, which have been described by travellers as occurring in the spring or autumn, *before* the melting snows of the mountains reach Edmonton, or *after* they have passed it on their way to the sea.

XII.—*The Progress of Minnesota, Dakota, and Nebraska.*

The State of Minnesota and the territories of Dakota and Nebraska border on the districts of Lake Winnipeg and the Saskatchewan. Minnesota was organized as a territory in 1849, admitted into the Union as a State in 1857, and, with an area of 83,531 square miles, it has now a population exceeding 200,000 souls.† The census valuation of the real and personal property in the State in 1860 was \$52,294,413. The State income for eleven months in 1861 was \$106,462, and the expenditure for the same period was \$110,732.

In 1863 the projected railroads in this frontier State extended over 1,167 miles, and the sum already expended on them at that date (1st January, 1863), was \$3,200,000.‡ The quantity of wheat produced in 1860 was 5,101,432 bushels, nearly 3,000,000 bushels of oats, and 3,143,577 bushels of Indian corn.

The contribution of Minnesota to the volunteer army has already reached the following large numbers:—

	Number of Men.
10 regiments of infantry	9,065
1 regiment and 3 companies of cavalry	1,485
2 batteries of artillery	212
2 companies of sharpshooters	195
Total	<u>10,957</u>

* See papers by Dr. Joseph Henry, Secretary of Smithsonian Institution, and by Major Emory, of the Mexican Boundary Survey, on this subject. These papers are published in the "Transactions of the Smithsonian Institute," and in the "Report of the Mexican Boundary Survey." See also Reports of the Pacific Railway, and Lieutenant Warren's exploration in Nebraska and Dakota.

† 173,855 by the census of 1860.

‡ "American Railroad Journal."

These men have all engaged for three years, or for the war. The total number of forces Minnesota has sent into the field since the commencement of the war amounts to 11,887 men. Such are the resources of the new State of Minnesota, bordering on the Lake Winnipeg district. Twelve years since it was for the most part an uninhabited wilderness; now it has sent an army of nearly 12,000 men into the field.

Dakotah territory, which lies west of Minnesota and whose northern boundary is conterminous with part of the districts in British America referred to in this paper, was organized in 1861. Its area is 325,000 square miles. Much of it lies within the limits of the American desert, and will never be peopled with white men. It contains a population of 44,501, of which 39,664 are Indians.

Nebraska territory lies west of Dakotah; in 1860 its population was 28,841, besides 5,072 Indians. The aridity of this territory will for ever prevent it from assuming any great commercial or political importance.

XIII.—*Indian Population in Central British America.*

Great misapprehension exists as to the numbers of the Indian population of Rupert's Land. They do not exceed 40,000 in all. The number inhabiting the prairies and plains of the Lake Winnipeg and Saskatchewan districts do not exceed 20,000 at the present time. Under proper management the Indian would become the most useful and tractable protectors of a telegraph line. Once impressed with the idea that it is something supernatural, they would cherish it, protect it, and reverence it as a "manitou," or superior spirit, exercising a control over their fortunes and even lives.

XIV.—*General View of British America.*

The total population of British America at the present moment approaches four millions, and the quantity of land *available for agricultural purposes* is approximately 267,000 square miles—or more than twice the area of the United Kingdom of Great Britain and Ireland; and equal to France (including Corsica), Belgium, Holland, and Portugal combined.

		Area in Square Miles.	Estimated Population, January, 1864.
New Brunswick	—	27,620	295,000
Nova Scotia and the Island of Cape Breton.....	—	18,600	352,000
Newfoundland	—	36,000	140,000
Prince Edward Island	—	2,133	95,000
Total area	—	84,353	882,000
Estimated area available for agricultural purposes	52,000	—	—
Upper Canada	—	140,000	1,520,000
Lower „	—	200,000	1,200,000
Estimated area available for agricultural settlement	90,000	—	—
Basin of Lake Winnipeg and Valley of the River Athabaska	—	400,000	15,000
[Exclusive of Indian population, 40,000]			
Estimated area available for agricultural settlement	95,000	—	—
British Columbia and Vancouver's Island [Exclusive of Indian population, 60,000]	—	210,000	50,000
Assumed area suitable for agricultural purposes	30,000	—	—
Total area	—	1,034,353	3,667,800
Estimated area available for agricultural purposes	267,000	—	—

Or about nine times the area of Great Britain and Ireland. But throwing out what may be called the inferior and desert portion of this immense territory, we find the area of the agricultural portion to be approximately 267,000 square miles, or as large as France, Holland, and Denmark put together, with an aggregate population approaching *four millions*.

Six years only have elapsed since public attention in England and America was first directed to the Lake Winnipeg and Saskatchewan districts. During that period not only has satisfactory evidence been obtained of the existence of mineral wealth, in the form of coal, iron ores, salt, and gold, but there are good scientific grounds for the belief that the original matrix of the auriferous drift will be found to extend far north of the Saskatchewan district, towards and perhaps beyond Lake Athabaska. The Hudson's Bay Company, in the recent report of the committee, state that "they are prepared to meet the wishes of Her Majesty's Government and the spirit of the times, by assisting in the settlement of any portion of the territory which may be fit for it, or by facilitating the transmission

“ of intelligence by post or telegraph, and aiding general communication where it may be practicable to do so.”

Who can foresee the importance, or estimate the value of telegraphic communication with our Pacific posts, now that the British Pacific fleet finds a suitable station in our own territory? Now that British Columbia has assumed the position of a gold-exporting colony, and that numerous parties of gold-seekers from the Pacific Slope have already passed to the east side of the Rocky Mountains, and invaded the Saskatchewan valley, like the Indian of American pre-historic times, coming from the west.

From private inquiries which have been made to me recently, I am impressed with the conviction that many of the most prominent citizens in Minnesota are fully alive to the vast importance of the Winnipeg and Saskatchewan districts, and they will spare neither energy or money to continue and increase their commercial intercourse with them. On the boundary line, their military post, Pembina, 65 miles from Fort Garry, is now occupied with United States troops, numbering 350 men. While these will insure the preservation of order among the Indian tribes which have so recently disturbed the frontier settlements in Minnesota, they will familiarize the Red River people, now numbering 10,000 souls, with all the advantages of commercial intercourse.

I have refrained from making any allusion to the fur trade, which has so long been a source of wealth to the Hudson's Bay Company. The districts in which that lucrative trade can be carried on with increasing profit under judicious management, lie wholly beyond the area whose resources form the subject of this paper. With prompt and energetic action on the part of those who in a measure rule the destinies of this valuable portion of the empire, Central British America will rapidly acquire an important commercial and political status, independently of its being the high road for postal and telegraphic communication between the Atlantic and the Pacific, lying wholly within the jurisdiction and influence of British rule.

*On the OPENING and EXTENSION of DURHAM UNIVERSITY
ACADEMICAL ENDOWMENTS. By JAMES HEYWOOD, M.A.,
F.R.S.*

[Read to the Statistical Section of the British Association, at Newcastle, 1863.]

THIRTY-ONE years ago, an Act was passed, vesting in the Dean and Chapter of Durham, with the consent of the Bishop of that diocese, the formation and maintenance of a University for the advancement of learning in connection with the cathedral church of Durham.

It was the era of the Reform Bill of 1832; the time had arrived when public opinion sanctioned a revision of the system of English ecclesiastical revenues, and from the large amount of property connected with the church establishment at Durham, an estate, now yielding an annual sum of about 2,361*l.*, was set apart for the establishment of the new seat of learning in that city.

In 1837, a Royal charter was granted to the University of Durham; and in 1840, the Ecclesiastical Commissioners were empowered by an act of parliament to prepare and lay before Her Majesty in Council a scheme for maintaining the University of Durham in a state of respectability and efficiency.

The office of Warden of the University was proposed to be annexed, on the first vacancy, to the Deanery of Durham; a canonry of Durham was to be annexed to the professorship of Divinity, and another canonry to the professorship of Greek.

Her Majesty in Council ratified the scheme of the Ecclesiastical Commissioners, by which an estate, whose income amounts at the present time to about 4,983*l.*, was transferred to the University of Durham. From this Order in Council estate, a professorship of mathematics and astronomy, with a stipend of 700*l.* a-year, was endowed; twenty-four fellowships of 120*l.* a-year each were established, with a further sum of 30*l.* a-year to each of the ten senior clerical fellows.

The Durham University estates are let on a system of fines, the annual amount of which varies so much that in one year the produce of the fines received on the original estate did not exceed 300*l.*, whilst in another year the fines on the same estate yielded 3,000*l.*

During the last four years, the average of the—

	£
Gross income of the original estate has been	2,240
And of the Order in Council estate	4,930
	<hr/>
	7,170
	<hr/>

During the same period, the average of the—

	£
Net income of the original estate has been	1,710
And of the Order in Council estate	3,700
	<hr/>
	5,410
	<hr/>

The difference between these two sums,

	£
Gross income	7,170
Net „ „	5,410
	<hr/>
	1,760
	<hr/>

shows the average out-goings, which amount to nearly one-fourth of the gross rental, and are so excessive that advantage would be derived by an appeal to the attorney-general, to inquire by means of the agency under his control into the cost of the management of the landed estates of the University of Durham, considered as charitable property.

In 1861, commissioners were appointed under a new Durham University Act, who observe that the financial arrangements of Durham university have been conducted with little system or success; the commissioners further remark that there has been no sufficient encouragement given to the study of physical science, and that the University of Durham has failed to do for the industry of the north all that it might reasonably have been expected to perform.

Among the remedies suggested by the Commissioners of 1861 is the recommendation that there should be an annual audit and report made by a professional auditor, to be nominated by the visitor.

The Commissioners under the Act of 1861 were the Right Rev. Dr. Baring, Bishop of Durham, the Right Hon. Robert Lowe, M.P., Vice-president of the Committee of Council on Education; the Right Hon. C. B. Adderley, M.P.; the Hon. H. G. Liddell, M.P. for South Northumberland; the Rev. Dr. Vaughan, Vicar of Doncaster; and Robert Ingham, Esq., M.P. for South Shields; they proposed that the Bishop of Durham should be the visitor of that university, and that he should have the appointment of the professors of Divinity and of Greek.

University scholarships were proposed by the commissioners to be distributed among three university schools or departments:—

1. Arts, including classics and mathematics ;
2. Theology ;
3. Physical science.

The distribution was to be made according to the numbers of students in each department respectively, provided that not more than one-third in number and value of the scholarships should be held at any one time, by the scholars in the School of Physical Science.

The commissioners propose to stop any further election or appointment to any of the existing twenty Church of England scholarships, as well as to any of the four medical scholarships and to any of the twenty-four Church of England fellowships of the university.

In the place of these fellowships and scholarships, and of various useless offices, the commissioners propose to create forty open scholarships of 30*l.* a-year each, to be competed for by any persons, whether members of the university or not, and to be tenable for two years.

Forty open scholarships of 50*l.* a-year each are also proposed by the commissioners to be competed for by any students commencing their second year, and to be tenable for one year. These last-mentioned scholarships may also be tenable for a second year, if a student having taken a degree in one school, such as arts, should become a student in some other school, such as divinity or physical science.

According to the average yearly expenditure of the University of Durham, during the years 1859-61, as given by the commissioners, 2,916*l.* were annually devoted to the fellowships; and during the year 1862, the officers and fellows received 7,703*l.*, whilst the university scholars only received 740*l.*, or *about one-tenth* of the sum paid to the older members, who formed the larger portion of the resident governing body of the university.

Examinations for the new scholarships would be adapted to subjects of study carried on in the schools of arts, divinity, and physical science respectively.

Three professors were proposed for the school of physical science, namely, of chemistry and metallurgy, geology and mineralogy, and mining and machinery, each professor to receive a salary of 300*l.* a-year each.

New degrees, such as those of Bachelor of Theology (B.T.), and Bachelor of Science (B.S.), were proposed to be created, but the progress of reform was checked by petitions from the Dean and Chapter of Durham, and other persons, to Her Majesty in Council, against the ordinances drawn up by the commissioners. The

petitioners appeared by barristers, before a Committee of the Privy Council, and the ordinances of the commissioners have been disallowed by the Privy Council. The special committee of the Privy Council declared their opinion that the Act of Parliament of 1861, for making provision for the good government and extension of the University of Durham (24 and 25 Vict., cap. 82), did not contemplate such changes as the creation of new degrees, or warrant their being carried into effect.

The commissioners, in concluding their report, decline to frame fresh ordinances in the place of those which have been disallowed, and the task of reconstituting the University of Durham is left for the present to the Dean and Chapter of Durham.

The Dean and Chapter of Durham are, for the most part, exempt from all special duties connected with the university in that city; but under their control, all the students are required to attend the services of the Church of England; scholarships and fellowships are confined to members of that church, and every person who takes a degree in arts is required to subscribe the three articles of the thirty-sixth canon, on Royal supremacy, the thirty-nine articles, and the Book of Common Prayer.

Universities and colleges in modern times ought to be national institutions; their endowments cannot any longer be wisely administered in accordance with the ideas of lawmakers of the seventeenth century.

The Durham University Commissioners observe that the Dean and Chapter of Durham, by requiring the attendance of all the university students at the services of the Church of England, have virtually excluded Dissenters from becoming members of the university.

In the University of Durham, where the exclusive system has been acted upon, the numbers of the students has been almost constantly declining, until, in 1862-63, there were—

Only	23	students in arts
And	23	„ divinity
—		
Total	46	„
—		

Vainly has an endowed seat of learning been formed under the shadow of the cathedral church of Durham, if the number of the students in arts be found on the whole to diminish, in that university, from 76 in 1850, to 28 in 1860, and 23 in 1863; whilst the number of the Durham students in divinity has decreased on the whole from 40 in 1850, to 20 in 1862, and 23 in 1863.

Occasionally the University of Durham has one or two medical

students, who, having passed through their medical course at the Newcastle-upon-Tyne College of Medicine, reside one academical year at Durham, with a view to obtain the degree of bachelor in medicine in that university.

The average number of students who attend the lectures of the professor of mathematics, at Durham, amounts to four; and the reader in history and polite literature, in a recent year, was not required to give lectures.

The proposed suppression of fellowships in the University of Durham would probably diminish the number of resident clerical members of convocation in that seat of learning, and the interference of the academical convocation in university business might, under these circumstances, gradually become unnecessary.

The governing body of the University of Durham is proposed by the commissioners to consist:—

1. Of a senate, comprising the warden, who is to be the Dean of Durham for the time being, with the professors and tutors. All future university statutes are to be originated by the senate; and

2. Of a convocation, comprising the warden, the professors and tutors, and all persons who are at present members of the existing convocation, as well as future graduates, who have proceeded to their second degree in arts, divinity, or physical science. The power, either of confirming or rejecting measures proposed to them by the senate, is to be vested in the convocation, or assembly of superior graduates.

It rarely occurs that any academical degree is taken by the students in divinity at Durham; some, however, pass through the school of arts, and graduate as bachelors of arts.

For a degree in arts, a course of study during three years is requisite, each year comprising three terms, amounting in all to twenty-four weeks in a year. Two years only of interval after matriculation is requisite in the University of London for the degree of bachelor of arts, and the third year of study ought to be dispensed with in the University of Durham.

Bishop Ellicott strongly recommends a period limited to two years for the studies in arts of the University of Oxford; and a similar result may have been in view, when the Durham Commissioners under the Act of 1861 recommended short periods of two years each for the holding of undergraduate scholarships in the University of Durham.

Parliament would probably sanction with readiness well devised plans for the advancement of the higher education of the country, if more public interest were expressed in favour of reforming educational endowments.

Since the foregoing observations were written, it appears that a plan, comprising a large measure of reform for the University of Durham, has been prepared by the Dean and Chapter of Durham.

That ecclesiastical body is expected to propose a reduction in the number of University fellowships, increased encouragement to the study of physical science, the removal of religious tests from the degree of bachelor in secular faculties, such as arts and medicine, and the appointment, by the Dean, of a Warden for the University of Durham, specially charged with the care of the new seat of learning.

REPORTS *of the* OFFICIAL DELEGATES *from* ENGLAND *at the*
MEETING *of the* INTERNATIONAL STATISTICAL CONGRESS,
BERLIN, *September, 1863.*

[Continued from p. 419, vol. xxvi.]

3. MR. VALPY'S REPORT.

HAVING been deputed to attend this meeting of the Congress, as one of the delegates from England, by the President of the Board of Trade, the Minister who received the Congress, upon the part of the Government, in London, I beg to offer the following remarks upon the progress made in some branches of the official statistics of the United Kingdom since the last meeting of the Congress.

Honoured as I was, in conjunction with my colleagues Dr. Farr and Mr. Hammick, upon the occasion of the last meeting of the Congress, by personal communication with the Prince Consort, I cannot but allude to the loss which I feel the Congress and the science of statistics have experienced in the lamented death of His Royal Highness.

Referring, in the first place, to the statistics published in my own department, I have to report that continued attention has been given to the several returns prepared for Parliament, with the view of increasing their usefulness as sources of information, and making them more valuable as statistical records.

The statistics which are now prepared and published by the Board of Trade afford very comprehensive information with respect to the foreign trade and navigation of the country, and exhibit the principal results of the separate departmental returns relating to finance, education, pauperism, crime, the movement of the population, and other subjects of national interest. The full details for these subjects are published in the reports of the separate departments.

Copies of the publications of the statistical department are regularly forwarded to each foreign Government and to the principal statistical departments in each country.

The publications of the statistical department of the Board of Trade now comprise the following documents:—

Annual Statement of Trade and Navigation.

Monthly Accounts of Trade and Navigation.

Statistical Abstract.

Miscellaneous Statistics.

Colonial Statistics.

Foreign Statistics.

Statistics of Changes in Foreign Tariffs.

With respect to the chief record of the commerce of the United Kingdom, *The Annual Statement*, it may be mentioned that the specifications of the articles of import and export have been recently revised in order to render them more in accordance with the present state of British trade with foreign countries.

With reference to the value of the trade between individual countries, as stated in their respective returns, considerable differences are still to be met with.

It will be in the recollection of the Congress that this subject was brought before it at the last meeting by Mr. Messenger, one of the principal officers of customs in London. There are circumstances which will always prevent a complete correspondence in the accounts of two countries of the trade carried on between them; but the variations which at present exist are of sufficient importance to render this subject deserving of the further attention of the Congress and of the official delegates connected with departments which publish commercial statistics.

An alteration which will be made in the form of the import account in the "Annual Statement" of the commerce of the United Kingdom for the year 1862 may be mentioned as illustrative of the changes effected in the British system of trade.

In consequence of the small number of articles now subject to import duty by the tariff of the United Kingdom, the columns hitherto given to indicate the rates of duty and the amount of duty received upon the several articles of import are generally but so much blank paper in the pages of the account of imports. A saving of space in the volume will now be effected by dividing the articles of import into two classes, of duty free and duty paying goods. The latter class, consisting of not more than about twenty separate kinds of articles, will only require the specification of the rates and amount of duty.

In the last number of the "Statistical Abstract," some new tables have been added, and there is a fuller specification of the articles of import and export. In one of the new tables, the estimated and actual amounts of the public revenue and expenditure are given, and the comparison between the estimates and the actual results affords a proof of the careful manner in which the financial estimates are prepared for Parliament. The aggregate revenue of the United Kingdom has increased notwithstanding the large reductions in some branches of taxation.

You will observe in Table IV in the "Statistical Abstract" that, between the years 1848 and 1862, customs' duties were repealed or reduced, involving an estimated loss of revenue of more than 6 millions sterling; and yet the customs' revenue amounted to 24 millions sterling in 1862, against 22½ millions in 1848.

An important fiscal reform was effected in 1861 by the repeal of the excise duty upon paper made in the United Kingdom. The duty amounted to $1\frac{1}{2}d.$ per pound weight and produced a revenue of 1,350,000*l.* sterling.

The excise regulations operated injuriously upon the paper manufacture, and the price of paper was enhanced both by the excise duty and the import duty upon foreign paper. Both duties have been abolished, and the English markets are now free for the sale of English and foreign paper upon equal terms.

Rags and other raw materials for the manufacture of paper can also be imported and exported free of duty. The supply of paper is not unimportant in connection with statistical publications, and the condition of that trade is deserving of attention in every country.

I wish particularly to invite the attention of the Congress to the publication of *Statistical Abstracts*, containing the principal results of national statistics. A great step would be made towards obtaining comparative international statistics if such a document were compiled and published in each country. In France and Austria, statistical abstracts have already appeared, and it is to be hoped that they will soon be adopted in other countries.

The utility of publishing the principal results of the statistics of all countries upon a uniform plan was recognized by the Congress at the meeting in London. But no plan, at that time, was agreed upon, as it appeared that the subject was engaging the attention of our distinguished colleague M. Quétélet. The Congress has recommended, for the sake of facilitating the preparation of comparative statistics, that in some of the statistical publications of countries not using the metrical system of weights and measures additional columns should be introduced to show results according to that standard. But it is doubtful whether a system of publishing figures not in accordance with the national system of weights and measures, could be adopted to an extent that would be of any value for international statistics. It is not the trouble of converting weights or measures from one system into another that seriously interferes with the compilation of tables of international statistics, but the absence of corresponding details in statistical publications. With similar items of information for all countries, it would not be difficult to frame tables of international statistics according to the system of money, weights, and measures in force in any one country, notwithstanding the different systems in which the original figures were expressed.

A comparative abstract of the principal statistics of countries upon the Continent of Europe has been attempted in parts vii and viii of the "Statistical Tables" relating to foreign countries, published by the Board of Trade. I have placed a separate copy of

this abstract in the collection of papers presented to the Congress, and also in the hands of some of the official delegates. The particulars which it was the endeavour to state for each country were the area, population, births, deaths, marriages, the total revenue and expenditure, the public debt, mercantile shipping, national and foreign vessels engaged in the foreign trade, and the value of the total imports and exports. A reference to the table will show how many of these particulars can be gathered from the published statistics of the several countries.

Whilst referring to international statistics, I may mention that the statistical department of the Board of Trade is preparing a new parliamentary return which will show for each article the different classifications as well as the different rates of duty adopted in the several tariffs. As the enumeration of articles of import in the commercial returns of different countries depends very much upon the classifications adopted in the tariffs, a return showing the different manner in which an article is classified for the levying of duty in different tariffs will not be devoid of statistical interest.

The trade returns, as well as the finance returns of the United Kingdom, exhibit the success of our commercial policy. The value of the total imports of merchandise was 226 *millions* sterling in 1862, against 152 *millions* in 1854, when the real value was first ascertained.

The value of the exports of British produce increased from 71 *millions* so recently as in 1850 to 136 *millions* in 1860. In consequence of the civil war in America, the value fell from 136 *millions* in 1860 to 125 *millions* in 1861 and to 124 *millions* in 1862, a decrease of less than 10 per cent.

The *quantities* of cotton yarn exported fell from 197 *million lbs.* in 1860 to 93 *million lbs.* in 1862. The *value* of cotton yarn exported decreased from 10 *millions* sterling in 1860 to 6 *millions* in 1862.

The exports of cotton piece goods fell, as regards *quantity*, from 2,766 *million yards* in 1860 to 1,681 *million yards* in 1862; and as regards *value*, from 42 *millions* sterling in 1860 to 30½ *millions* in 1862.

Gentlemen, you will appreciate the importance of the cotton manufacture in the United Kingdom before the war in America, when I remind you that *six or seven hundred thousand persons* were directly engaged in it; that it employed an estimated capital of 200 *millions* sterling; and that it contributed from 50 to 60 *millions* to the annual exports.

In the volume of *Miscellaneous Statistics*, published by the Board of Trade, some information has been collected upon two of the subjects discussed by the Congress at its last meeting—prices and rates of wages. It has not been practicable, as yet, to follow the

elaborate suggestions of the Congress upon those branches of statistics, but information has been collected which, it is hoped, may prove to be statistically useful and interesting. The prices paid for various articles by the army and navy departments, and some public institutions, are given. The rates of wages paid in several of the great branches of industry have been collected by the assistance of the principal chambers of commerce. These statistics, although not so complete as it is to be hoped they will eventually be made, have excited a good deal of interest.

The rates of agricultural wages in each county of England and Wales, Scotland and Ireland have been collected by the Government. Statistics of the prices of the chief articles of consumption, and of the remuneration of labour in the various branches of employment, are of great social and economic value.

Dr. Farr has already informed the Congress that the collection of agricultural statistics has not been commenced in England nor resumed in Scotland. Ireland is a happy exception in this respect to the other divisions of the kingdom. The Registrar-General in Dublin, who superintends this branch of the statistics of Ireland, has just been able to announce a fact of considerable public importance with respect to the growth of flax. It appears that in 1863, as compared with 1862, there was an increase of no less than 64,000 *acres* in the extent of land cultivated with flax in Ireland. A larger production of a raw material for spinning is a highly important fact at the present time.

It is believed to be the feeling of the agriculturists in England, as a class, that the Government has no right to call upon them for information respecting their farming operations. But as a matter of principle it does not appear to be any more objectionable to require the farmer to give information as to his cultivation of the land than to oblige the merchant to register his commercial transactions with foreign countries.

Prejudices are, however, happily removed in the course of time by the current of public opinion, and the present state of ignorance as to the agricultural resources of the United Kingdom cannot continue. The recommendations of the Congress on this subject will have an influence in England.

The "Judicial Statistics for England and Wales," published by the Home Department, have been perfected since the last Congress, and they now afford very useful and interesting information respecting the proceedings of our courts of criminal and civil law. Differences in the laws have prevented an assimilation of this branch of our statistics for the three divisions of the kingdom, but progress is being made towards this important object.

With respect to meteorological observations in England, Admiral

Fitzroy reports that continued progress has been made in the collection of information for which his department was instituted, and that a considerable advance has been made in the practical application of meteorology to every day use.

I trust that the reports of the English delegates will be satisfactory to the Congress.

Our colleague from Sweden, Dr. Berg, has reminded us that much progress in the collection and improvement of official statistics cannot be effected in the course of a few years only. The Congress must not be disappointed at the absence of speedy and striking results to its labours. It is not always the most conspicuous effects that are the most valuable or the most lasting. The Congress is certainly doing good service to all nations. The periodical meetings which we are invited to hold in the capital cities, where the members are received with royal and general kindness, must exercise a great and favourable influence upon public opinion in regard to national statistics.

The opportunity afforded by the Congress for the meeting of public officers and gentlemen interested in statistics from so many countries is productive of much advantage. The circle of our friends is enlarged, and, speaking as an official delegate, I can say that our means of usefulness at home are increased, and our efforts for improvement are much encouraged by the cordial personal intercourse between the members of the Congress.

We must also remember, Gentlemen, that the labours of the Congress are not unrecorded, and if the recommendations which are embodied and preserved in the printed reports are fully carried into effect, they will always afford a most useful guide to all workers in the field of statistics.

Upon the present occasion I think we have every reason to acknowledge our gracious reception by His Majesty the King of Prussia, to congratulate ourselves upon the honour conferred upon us by the Count d'Eulenburg in taking the chair, and to express our best thanks to Dr. Engel for his labours on our behalf.

MISCELLANEA.

CONTENTS:

	PAGE		PAGE
I.—The Annual Accumulations of Capital in the United Kingdom	118	III.—Comparative Statistics of European Armies	128
II.—Traffic Statistics of Waterloo Bridge, London	127	IV.—Statistics of French Commerce	129
		V.—The Import and Export Trade of the United Kingdom in 1861-62-63	132

I.—*The Annual Accumulations of Capital in the United Kingdom.*

FROM the *Economist* of the 12th and 19th December, 1863:—

I.

“ It is somewhat singular that so few systematic attempts have been made of late years, or indeed at all, to ascertain with some degree of numerical precision the sum which represents the annual savings of the United Kingdom—meaning by annual savings the net surplus which remains for employment and investment after all expenses of living and of carrying on the public and private transactions of the country have been met, and after all expenditure necessary to replace dilapidations and wear and tear has been provided. There is a sort of notion or tradition that our annual net surplus of income—that is, of income which remains after all deductions of the nature just indicated have been made—amounts to about 60 Millions sterling. Now, whether this net surplus be 60 millions or some larger or smaller sum, it is quite clear that it is the only real fund out of which can be provided the capital required for the new enterprises of each year. Without descending to any minute classification, we may fairly divide as follows the groups of objects among which in this country our net surplus income is distributed, viz.:—

“ 1. Improvement and extension of the cultivation of the soil—drainage, improved machines, buildings, and appliances.

“ 2. Improvement and increase of dwellings—including expenditure for sanitary purposes.

“ 3. Improvement and multiplication of manufactories—machines, tools, workshops.

“ 4. Extension of public works and public buildings—railways, docks, bridges, telegraphs, roads, churches, hospitals, colleges, asylums.

“ 5. Increase of trading capital—ships, stocks of goods at home and abroad, trading advances in colonies and foreign countries.

“ 6. Foreign and colonial investments—loans, railways, public works, &c.

“ 7. Increase of furniture, wearing apparel, ornaments, carriages, jewels, works of art, and objects of taste and luxury.

“ If our yearly expenditure on these seven groups of objects amounts to no larger a sum than our yearly net surplus, we shall, in the absence of sudden disturbing causes, such as war or scarcity, pursue an even and regular course. If the expenditure falls short of the surplus, the tendency will be towards low rates of interest; and if it rises greatly above the surplus, no device or ingenuity can avert the penalties of financial pressure in some form and in some degree.

“ We incline to think, after taking some pains, that the best test available in this country for estimating the amount of annual savings is the information rendered accessible by means of the Income Tax assessments. Let us say, however, as plainly as possible at the outset that we pretend to no refined accuracy in this inquiry. All that can be done is to arrive at certain probabilities by the aid of materials, all of them imperfect, and many of them deceptive.

“ There are five schedules under which Incomes are assessed,—viz., under

“ A. Incomes from ownership of land, houses, railways, mines, &c.

“ B. Occupation of land.

“ C. Dividends on funded property.

“ D. Profits of trades, professions, &c.

“ E. Official incomes, public and private, *e.g.*, army, navy, public departments, public companies.

“ The tax under each of these schedules is collected by means of returns obtained by the tax officers from the persons whom they believe come within the area of assessment. The only check on the accuracy of the returns is the honesty of the people who assess themselves, and the vigilance of the officers in the discovery of fraudulent cases. As a matter of fact, without entering upon moral considerations, it is perfectly well known that the assessments fall considerably short of the real amount of income liable to the tax. The most complete assessments are those under Schedules A and C, the least complete those under Schedule D. We cannot err, therefore, in assuming as a sort of basis of our inquiry that to whatever extent the income tax returns may show an increase of public wealth, that increase will in all cases be largely under the truth.

“ In the following Table (A) we exhibit the amount of Income Assessed under each schedule in the three financial years 1854-55, 1856-57, and 1859-60,—the interval, therefore, embracing a period of five years, during the whole of which time the range of assessment was the same, namely, commencing with incomes of 100*l.* per annum, and also extending to the three divisions of the United Kingdom. The five years exhibited were in many ways a fair specimen period. They were not all good, nor all bad. Probably, as a whole, they were five years rather bad than good.

(A.)—*Income Tax, 1854-55 and 1859-60—Amount of Incomes, commencing at 100l. per Annum, Assessed in Years ended 5th April, stated in Millions Sterling.*

Years ended 31st March.	A.	B.	C.	D.	E.	Total.
	Mlms. £	Mlms. £	Mlms. £	Mlms. £	Mlms. £	Mlms. £
I. ENGLAND AND WALES.						
1854-55	100·8	41·1	24·8	74·6	13·5	254·8
'56-57	103·6	41·2	26·9	73·5	15·8	261·0
'59-60	112·1	42·9	28·3	81·9	17·0	282·3
Increase 5 years	11·3	1·8	3·7	7·3	3·5	27·5
Annual average	2·3	0·4	0·7	1·5	0·7	5·5
II. SCOTLAND.						
1854-55	12·1	5·7	—	11·9	0·8	30·5
'56-57	12·5	5·9	—	11·1	0·9	30·5
'59-60	14·0	6·3	—	8·6	1·0	29·9
Increase 5 years	1·9	0·6	—	3·3	0·2	0·6
Annual average	0·4	0·1	—	0·6	—	0·1
III. IRELAND.						
1854-55	11·9	2·6	1·4	4·8	0·9	21·6
'56-57	11·9	2·6	1·4	4·6	0·9	21·5
'59-60	12·9	2·8	1·4	4·9	1·0	22·9
Increase 5 years	1·0	0·2	—	0·1	0·1	1·3
Annual average	0·2	—	—	—	—	0·3
Total United Kingdom } (increase 5 years) }	14·2	2·6	3·7	4·1	3·8	28·4
Annual average	2·8	0·5	0·7	0·8	0·8	5·7

“The most salient feature in this table is the rapid rise in the assessment under Schedule A—that is the assessments on the incomes of *owners* of lands, houses, railways, mines, and the like. Taking England and Wales, the increase of this class of incomes was 2·3 millions per annum—or taking the United Kingdom, it was 2·8 millions per annum. The increase of assessments under Schedule D (trades and professions) was greatly affected by the disastrous years 1857-58. But under C and E, the progress is continuous and important.

“We have then in the figures of Table A a *minimum* statement of the average annual growth of incomes of 100l. and upwards, during the five years ended with 1859-60. We say a *minimum* statement, bearing in mind the omissions, evasions, frauds, and oversights, inseparable from any scheme of income tax revenue. But more than this, we must recollect that the table wholly omits the numerous class of incomes *below* 100l. per annum.

“ The incomes *above* the 100*l.* limit assessed in 1859-60 amounted to 335 millions. It is no part of our present plan to enter upon the very difficult task of estimating the aggregate amount of the incomes which fall below the 100*l.* limit. We shall not overstate the case, however, if we say in general terms that the aggregate of these small, or wages, or sub-tax incomes is certainly greater than one-half of the incomes liable to assessment.

“ The figures in the table show an average annual increase of 5·7 millions sterling—one-half of the increase occurring under Schedule A. The amount of capital, or to use the technical phrase, the capitalized value represented by the various kinds of income included in the five schedules, is obviously very different. It might not be an exaggeration to put down the whole of the increase under Schedule A as worth 28 or 30 years' purchase, while probably 8 or 10 years' purchase might be a sufficient multiplier for the increase exhibited under D and E. The rates of capitalization can only be a matter of estimate. Considering, however, the large omissions and under-statements of all income tax statistics, *and also remembering that the figures before us wholly omit the sub-tax incomes*, we have, after taking some trouble, arrived at the conclusion that if we multiply by 20, or, what is the same thing, capitalize at 20 years' purchase, or at the rate of 5 per cent. per annum, the total average annual increase shown in Table A, we shall not overstate, but the contrary, the annual savings of the United Kingdom during the five years under review.

“ This process ($5\cdot7 \times 20$) gives a result of 114 *Millions sterling* as the average annual savings during the five years 1854-59. Looking at the progress made during the last four years, it is probable that during the present year (1863) our annual savings are quite 130 millions sterling.

“ It is not sufficient, however, for practical purposes that we should ascertain the rate of annual savings at the *present time*. If we are to compare with profit and certainty the effects produced by any given expenditure at two periods, we must be able to say whether during the same periods the amount of annual savings are the same or different.

“ In the next Table (B), we have given the amounts of income assessed at an interval of nine years, 1843-44 and 1852-53. At that time the commencing limit was 150*l.* per annum, and the tax did not extend to Ireland. These are two important qualifications to be borne in mind.

“ The aggregate average increase of income exhibited in this table is 2·1 millions per annum in Great Britain, equal at 20 years' purchase to 42 Millions of capital per annum. The condition of Ireland at the period in question was so unfavourable that, as we know from other sources, there were no annual savings in that country, but on the contrary a progressive impoverishment. The then sub-tax incomes, between 100*l.* and 150*l.* per annum, afforded, doubtless, some margin of surplus. But after every allowance has been made, it is abundantly clear that the annual savings during recent years and at the present time are very much greater than they were during the ten years 1843-53.

(B.)—*Income Tax, Great Britain, 1843 and 1853—Amounts of Income (stated in Millions Sterling) Assessed, the commencing limit being 150l.*

Years ended 31st March.	A.	B.	C.	D.	E.	Total.
	Mlms. £	Mlms. £	Mlms. £	Mlms. £	Mlms. £	Mlms. £
I. ENGLAND AND WALES.						
1843-44	85·7	40·4	27·3	56·6	11·0	221·1
'52-53	96·2	41·1	26·7	59·6	11·0	234·7
Increase 9 years	10·5	0·7	0·6	3·0	—	13·6
Annual average	1·2	0·1	0·1	0·3	—	1·5
II. SCOTLAND.						
1843-44	8·7	5·2	—	8·4	0·3	22·6
'52-53	11·0	5·5	—	10·5	0·6	27·6
Increase 9 years	2·3	0·3	—	2·1	0·3	5·0
Annual average	0·2	—	—	0·2	—	0·5
Total Great Britain, } increase 9 years ... }	12·8	1·0	0·6	5·1	0·3	18·6
Annual average	1·4	0·1	0·1	0·6	—	2·1

Note.—The income tax was not extended to *Ireland* till 1854—and in the financial year 1853-54 was first applied to incomes between 100l. and 150l. per annum.

“With this fact for a guide, we may successfully explain many things which have occurred since 1853. Engagements which, met only by the resources of 1843-53, would have been impossible or ruinous have entailed but little difficulty at a time when the annual accumulations of wealth have been doubled.

“In so intricate a matter, however, it is not enough to arrive by a simple process, no matter how apparently simple and satisfactory, at a set of conclusions. We must not be content until, by other and independent means, we can test and verify our first results—and next week we will resume the subject by following such a plan.”

II.

“We have now to bring together proofs from collateral sources of the inferences we drew in our first article from the evidence afforded by the income tax assessments, as regards the average annual amount of the net savings of the United Kingdom during the five years 1854-59. We said that, according to the evidence then before us, we were inclined to think that the net savings in 1854-59 were about 114 Millions sterling per annum, and that at the present time the amount is very probably quite 130 Millions per annum.

“The *income tax* assessments profess to include all incomes of 100*l.* per annum and upwards, derived from every kind of source. The *poor rate* assessment, on the contrary, is confined to visible and tangible property only—stock in trade by a special exemption not being included. It is almost superfluous to say that the valuations of parishes and unions for purposes of poor rate are neither uniform nor satisfactory. Any evidence, therefore, afforded by the poor rate assessments can only be of a collateral nature.

“The net annual value of the property assessed to Poor Rate in England and Wales only was in—

Year.	Net Annual Value.	Total Increase.	Average Annual Increase.
	£	£	£
1840-41	62,540,000	—	—
'49-50	67,700,000	5,160,000	570,000
'55-56	71,840,000	4,140,000	690,000

“If we multiply these average annual rates of increase by 25 as a fair approximation of the capitalized value of the increments represented, we have for the nine years 1840-49 a result of 14¼ millions—and for the six years 1849-55 a result of 17¼ millions—as the average annual accumulations indicated even by so imperfect and partial a test as the poor law assessments in England and Wales. In the period 1840-49, considerable efforts were made to render the valuations uniform, and hence the average rates of 14¼ millions of increase during that period is more apparent than real. But in the period 1849-55, the result of 17¼ millions may be regarded as almost wholly attributable to the growing wealth of the country.

“We have, however, in the County rate assessments of England and Wales a confirmation of the results presented by the poor law returns. The annual value of the visible and tangible property upon which county rate was assessed in England and Wales was in—

		Increase.	
	£	£	
1856	65,100,000	—	
'60	68,400,000	3,300,000	

“or 825,000*l.* per annum average increase, equal, at 25 years' purchase, to 20½ millions sterling.

“We are quite sensible of the comparative smallness of the rates of accumulation shown by these figures, when brought into contrast with the 114 or the 130 Millions suggested in our former article. We want our readers, however, to see fully the connection of the different points of the case. The income tax returns for the *United Kingdom*, with all their omissions and defects, profess to

include nearly the whole of the area to be surveyed, and they, as we have seen, yield a certain result. The poor rate and county rate returns for *England and Wales* contain still more omissions and defects,—are notoriously still more *under* the truth than even the income tax papers,—and, moreover, apply only to a special kind of the visible wealth of the country,—and still these tainted and partial returns do show very clearly a much higher ratio of increase since 1850 than before it: and a ratio of increase, bearing in mind all the needful qualifications, fully consistent, as we shall presently show, with the conclusions suggested by the income tax returns.

“Since 1851, there has been in Great Britain an Inhabited House duty of 9*d.* in the pound on the annual rent of houses of the value of 20*l.* per annum if used as dwelling-houses, and of 6*d.* in the pound if used as shops, ware, beer, or farm-houses. The following Table (C) gives the assessments under this duty in 1855 and 1860, an interval of five years.

(C.)—*House Duty, Great Britain, 1855 and 1863, Annual Value 20*l.* and above.*

Year.	Number of Houses, &c.			Annual Value.		
	Trade.	Dwelling.	Total.	Trade.	Dwelling.	Total.
	No.	No.	No.	£	£	£
1855	193,000	291,000	484,000	8,500,000	14,000,000	22,500,000
'60	204,000	328,000	532,000	9,200,000	16,000,000	25,200,000
Increase....	11,000	37,000	48,000	700,000	2,000,000	2,700,000

“In 1861, the total number of houses in Great Britain was 4,363,000: of this number, the 532,000 houses and shops assessed as being worth 20*l.* per annum represented 12 per cent., or say 1 in 8. The total increase of say 3 Millions, shown by the Table (C), is equal of course to an average annual increase of 600,000*l.* for the assessed houses alone. It is perfectly well known that for the purposes of the tax, houses and shops, especially of the larger kinds, are grossly under-rated. It is also perfectly well known that the increase in the number of houses *below* 20*l.* is greater than the increase in the number of houses above that limit, and it must be so from the circumstances of the bulk of the population. But if in one-eighth part of the house property of *Great Britain* there is an average increase of 600,000*l.* per annum of income, the average increase on the whole would be 4,800,000*l.* per annum,—and that sum could not well be capitalized at less than *ten* years' purchase, or say 48 millions per annum of value. To this result two corrections have to be applied, and unfortunately they are corrections which must be almost wholly conjectural. The first correction would increase the 48 millions on the ground of the notorious under-assessments prevalent all over the country. The second correction would reduce the 48 millions on the ground of the more precarious value of small house property. It seems to us that 40 millions may

be assumed as a fair compromise—but this 40 millions, it must be remembered, is the expenditure upon only *one* (the second) of the seven groups of objects enumerated in our first article.

“ But if 40 Millions sterling was in 1855-60 about the average annual expenditure in providing more and better house accommodation, let us inquire what was the annual expenditure under another leading group of objects—the fourth—expenditure on public works within the United Kingdom, such as railways, docks, bridges, roads, telegraphs, churches, and the like.

“ As regards British and Irish Railways, we have tolerably good information by means of the returns collected and published by the Board of Trade; and in the next Table (D) an abstract of those returns is given for various years so far as relates to the capital raised in the several periods by means of shares and loans:—

(D.)—*Railways in the United Kingdom, Total Capital Paid-up in Shares and Loans.*

At end of Year.	Paid-up.	Increase.	Number of Years.	Annual Increase.
	Mlms. £	Mlms. £		Mlms. £
1847	159·4	—	—	—
'48	200·2	40·8	1	40·8
'49	229·7	29·5	1	29·5
'50	240·3	10·6	1	10·6
1851	248·2	7·9	1	7·9
'52	264·2	16·0	1	16·0
'57	315·2	51·0	5	10·2
'61	362·3	47·1	5	9·4

“ According to these figures, the capital actually raised and paid-up for Railways within the United Kingdom has been about 10 millions per annum during the last ten years. Besides these 10 millions for *home* purposes, there has been raised about 4 millions per annum for railways in India; and beyond the 14 millions of which we have specific returns in these two categories, there has been, as every one knows, a vast expenditure of British capital on railways in Canada, Australia, at the Cape, in North and South America, in Spain, France, Germany, Denmark, and in point of fact in almost all parts of the world. The exact amount of this further expenditure can be estimated only, but it is a moderate computation to reckon 20 Millions per annum as the expenditure on home, colonial, and foreign railways alone during the last ten years; and it is also a moderate computation to place at 10 millions more the average annual expenditure of the last ten years on telegraphs, docks, roads, harbours, churches, hospitals, colleges, asylums, and other public buildings.

“ We can only revert here for a moment to the earlier figures in Table D, showing the expenditure in British railways in the two years 1847 and 1848. The largest expenditure was 40 millions in

the single year 1848, and the privations and suffering entailed by so vast a diversion of capital to a single kind of fixed outlay will not soon be forgotten. If we are justified in the belief we have expressed that in 1848-49 the annual savings of the country were not more than 50 or 60 millions, it is easy to understand how a railway expenditure of 40 millions almost paralysed every other branch of enterprise. And, in like manner, if we are justified in our belief that the annual savings at present are at least 130 millions, we can also understand how it happens that a railway expenditure of 20 millions per annum does not seem to produce any marked consequences.

“The evidence afforded by the duty on Fire Insurances is valuable for the objects we have in view. The assessment is in the form of a duty of 3s. per cent. per annum on the *sums insured*. It is easy, therefore, to deduce the amount of property insured from the amount of duty collected. We need not enter into the controversy which has been carried on so long as regards the policy or proportion of this fire duty. It is only necessary for our present purpose to bear in mind that a very large part of the property liable to be destroyed by fire is not insured at all—to say nothing of the multitude of valuable possessions which, from their very nature, *e.g.*, lands, ground-rents, canals, railways, &c., cannot come within the reach of the tax. We give the leading facts in the next Table (E):—

(E.)—*Fire Insurance—United Kingdom.*

Years.	Duty Collected.	Property Insured.	Total Increase.	Increase per Annum.
	Mlms. £	Mlms. £	Mlms. £	Mlms. £
1843	1·03	724	—	—
'53	1·27	890	166	16
'57	1·42	996	106	26
'62	1·66	1,162	166	33

“During the ten years 1843-53, the average annual increase in the property insured was 16 millions, or less than half the average annual increase of 33 millions during the five years 1857-62.

“It would be easy to multiply these corroborative evidences. But it is not necessary to do so. We have not referred at all to one class of evidence formerly much resorted to—we mean the returns of the probate and legacy duty. The gradual operation of the Succession Duty Acts of 1853 have for the present at least rendered the legacy duty returns almost useless as safe indications of the progress of public wealth. When the succession duty assessments have come fully into play, the case will be different.

“If, however, we have brought forward solid grounds for concluding that on the average of the last ten years there has been furnished out of the annual savings of the United Kingdom a sum of say 40 millions sterling for more and better dwellings—and 30 millions for home, colonial, and foreign railways, telegraphs, docks,

harbours, and public buildings—making 70 millions for two only out of the seven groups of objects enumerated in our first article—we shall have done enough to justify our computation of 130 Millions as being *at least* the total of our yearly surplus.

“ If 70 millions be indeed expended upon houses, railways, and public works, it may be seriously doubted whether the remaining 60 millions suffice for the — (1) drainage and improvement of the soil; (2) for the improvement and multiplication of manufactories, tools, and machines; (3) for increase of trading capital, ships, consignments, and the like; (4) for foreign and colonial loans; and (5) for the increase of furniture, apparel, works of art, and objects of taste and luxury.

“ At present we confine ourselves rigidly to the functions of the statistician. At some future time we may, perhaps, endeavour to investigate some of the general consequences of the facts now brought together.”

II.—Traffic Statistics of Waterloo Bridge, London.

MR. JOHN WILLIAMS, the Secretary to the Waterloo Bridge Company, has been so good as to forward for the use of the Statistical Society a return of the bridge traffic and tolls from 1817 to the present time. It appears from Mr. Williams’ statement that the money raised upon shares, annuities, and bonds by the company amounts to 1,035,184*l.*; that the preliminary expenses, including the cost of *four* acts of Parliament, were 11,867*l.*; the duty paid on 1,428,913 cubic feet of stone was 20,749*l.*

From the opening of the bridge on the 18th of June, 1817, to the 23rd February, 1863, that is, during 46 years, the total receipts from passengers on foot and from horse tolls amount to 704,703*l.* The total number of foot passengers who have crossed the bridge in the same period is 160,761,175. The traffic of foot passengers and the receipts in each year are shown by the following tables.

(I.)—Statement of the Number of Foot Passengers who have crossed Waterloo Bridge from 1817 to 1863.

Years.	Number of Foot Passengers.	Years.	Number of Foot Passengers.	Years.	Number of Foot Passengers.
1818	1,569,762	1836	2,330,391	1851	4,669,868
'19	1,798,242	'37	2,381,226	'52	4,983,636§
'20	1,819,215	'38	2,417,713	'53	4,609,422
1821	2,021,657	'39	2,476,231	'54	4,785,054
'22	2,210,600	'40	2,476,321	'55	4,861,792
'23	2,254,596				
'24	2,430,909	1841	2,446,922	1856	4,916,268
'25	2,596,356	'42	4,533,196*	'57	4,951,086
1826	2,806,584	'43	4,789,264	'58	4,930,422
'27	2,645,359	'44	4,967,014	'59	4,864,760
'28	2,579,038	'45	5,096,172†	'60	4,866,646
'29	2,624,620				
'30	2,420,726				
1831	2,397,671	1846	4,515,088	1861	5,011,994
'32	2,475,745	'47	4,360,350	'62	5,071,772
'33	2,280,244	'48	4,201,152‡	'63	5,141,084
'34	2,313,013	'49	4,197,080		
'35	2,371,350	'50	4,291,564	Total	160,761,175

(II.)—*Statement of the Total Receipts of Waterloo Bridge from 1817 to 1863.*

Years.	Total Receipts.	Years.	Total Receipts.	Years.	Total Receipts.
	£		£		£
1817	4,295	1836 ...	12,494	1851	16,475
'18	8,291	'37	12,791	'52	20,248§
'19	9,514	'38	13,063	'53	18,089
'20	9,855	'39	13,584	'54	19,197
		'40 ...	13,535	'55	19,650
1821	11,038				
'22	12,223				
'23	12,543				
'24	13,495	1841	14,442*	1856	19,676
'25	14,387	'42	13,621	'57	20,165
		'43	13,350	'58	20,322
1826	14,959	'44	16,526	'59	20,279
'27	13,914	'45	15,790†	'60	20,956
'28	13,719				
'29	13,636				
'30	12,618				
1831	12,497	1846	14,501	1861	21,490
'32	13,395	'47	18,668	'62	21,107
'33	12,061	'48	13,929‡	'63	23,129
'34	12,524	'49	14,513		
'35	12,699	'50	15,449	Total	704,703

* Foot toll reduced to $\frac{1}{2}d.$ 1st March, 1841.

† Hungerford bridge opened 1st May, 1844.

‡ Waterloo station opened 11th July, 1848.

§ Great Exhibition.

III.—*Comparative Statistics of European Armies.*

THE following table, showing the military force of the different States of Europe, and the consequent fiscal burden in each, is taken from the *Annuaire Encyclopédique* for 1863. These figures will possess a special interest for the readers of the *Journal* when considered in connexion with the important paper, in the present number, on English and French Military budgets.

Countries.	Army.	Population.	Expenses.	Cost per Man.	Inha- bitants to One Soldier.	Proportion per Cent. to Total.
			£	£ s. d.		
Germany	178,576	16,960,512	3,307,947	18 10 5	95	20
Austria	467,211	35,019,058	13,462,168	28 16 —	75	37
Belgium	40,115	4,671,183	1,290,105	32 1 2	117	23
Spain	120,000	15,500,000	5,026,474	41 16 10	129	25
Roman States	8,845	684,306	177,393	20 — —	77	—
France.....	513,349	37,500,000	27,545,815	53 12 9	73	33
Greece	10,291	1,096,000	216,900	19 18 5	100	32
Holland	59,431	3,569,456	1,876,316	31 12 9	60	25
Italy	314,285	21,920,269	13,186,845	41 19 2	70	27
Prussia	214,482	18,500,446	6,269,346	29 10 5	86	30
Great Britain	300,823	29,193,319	27,097,175	89 4 9	97	39
Russia	1,000,285	64,000,000	21,169,600	21 1 2	64	42
Denmark.....	50,000	2,605,024	701,544	14 5 6	105	37
Sweden	67,867	2,855,888	683,464	10 1 7	56	45
Norway	18,157	1,433,734	337,908	18 12 —	79	32
Turkey	429,000	39,000,000	6,000,000	15 4 —	91	—
Roumania	20,000	4,000,000	472,000	23 12 —	200	—
Servia	2,500	985,000	35,776	14 5 7	394	—
Switzerland....	—	—	—	—	—	—
	3,815,217	299,494,195	128,856,776	33 15 6	76	32

Note.—The *francs* of the original table have been changed into pounds sterling at the rate of 25 frs. to 1*l*.

IV.—Statistics of French Commerce.

THE following tables, illustrating the commercial progress of France in some of its principal branches during the three years ended with 1863, are taken from the *Economist* of the 13th February last :—

(I.)—Value of the Principal Articles IMPORTED and taken out of BOND FOR HOME CONSUMPTION.

Articles.	1863.	1862.	1861.
	fr.	fr.	fr.
Cattle	74,865,773	69,983,405	69,850,703
Fresh or salt meat	16,541,221	9,476,052	3,152,406
Cheese and butter	13,192,433	13,470,095	14,431,795
Hides	109,799,805	69,271,464	75,587,650
Wool	240,837,281	185,134,646	168,774,743

(I.)—*Value of the Principal Articles Imported—Contd.*

Articles.	1863.	1862.	1861.
	fr.	fr.	fr.
Silk	310,122,194	235,957,793	184,140,207
Grease and tallow	47,115,403	40,133,719	14,118,159
Guano and other manure	24,100,167	16,989,446	14,148,273
Rice	12,510,421	12,796,231	14,790,053
Arachides	19,590,627	18,287,313	11,330,167
Eatable fruits	16,042,280	17,250,450	13,712,509
Sowing seeds	18,210,101	15,519,392	14,406,318
Oleaginous seeds	40,868,824	49,251,054	51,749,374
Olive oil	24,561,648	32,490,236	22,119,651
Sugar	146,441,025	130,922,101	129,001,047
Cocoa	7,167,003	6,630,504	7,671,179
Coffee	80,593,368	75,973,972	68,243,773
Timber	126,018,315	113,381,744	131,338,950
Jute	4,208,464	3,780,339	5,369,189
Hemp	3,873,108	5,878,667	8,219,634
Flax	41,585,404	35,808,071	41,636,063
Cotton ..	177,170,622	126,158,877	270,631,594
Madder	5,537,040	6,254,753	5,971,507
Hops	3,285,823	3,838,968	4,514,744
Oil, other than olive oil	5,208,625	10,304,287	13,206,178
Coals	99,567,728	102,167,363	104,369,244
Ores of various sorts	23,401,339	22,454,823	20,953,782
Pig iron	18,021,343	22,207,082	13,034,367
Iron	4,709,291	22,889,302	3,947,553
Steel	2,244,519	2,646,441	2,285,938
Copper	41,491,425	34,831,678	40,362,458
Lead	9,333,599	9,285,082	9,734,345
Tin	9,959,666	11,385,013	11,344,709
Zinc	13,269,117	14,171,720	17,782,815
Indigo	3,175,080	2,219,085	3,856,584
Wines	5,650,664	5,700,002	11,040,552
Spirits	6,504,732	6,464,109	12,704,237
Flax, hemp, and jute yarn	4,588,533	5,830,097	5,870,738
Cotton yarn	4,525,948	12,942,055	5,094,834
Woollen „	11,126,009	7,492,917	1,209,627
Goats' yarn	4,337,980	4,933,318	5,639,600
Flax and hemp tissues	11,545,629	13,483,409	13,868,025
Silk tissues	4,717,780	4,624,049	4,212,138
Woollen tissues	32,091,735	40,961,310	20,603,456
Cotton „	7,726,076	14,305,265	9,382,382
Other tissues	6,547,303	7,235,178	6,302,229
Machinery	10,668,553	10,770,352	9,683,203
Iron and other metals wrought	10,948,358	12,892,775	7,295,767
Iron vessels	4,900,350	7,194,360	796,980
Grain and flour	64,738,039	157,509,374	390,012,369
Totals of the <i>fifty</i> articles...	1,985,237,771	2,067,503,798	2,067,503,798

(II.)—*Value of the Principal Articles of French Production* EXPORTED.

Articles.	1863.	1862.	1861.
	fr.	fr.	fr.
Silk tissues	375,818,779	363,156,114	332,891,322
Woollen tissues	283,286,520	221,691,271	187,999,169
Cotton „	69,111,071	63,293,732	56,347,042
Flax and hemp tissues	18,602,740	14,467,086	14,871,869
Woollen yarn	13,107,615	12,539,176	6,562,593
Cotton yarn	1,506,576	1,693,668	1,063,781
Flax and hemp yarn	22,091,454	3,126,707	1,577,086
Prepared skins	54,086,685	38,866,486	32,209,457
Wrought skins and gloves	72,293,454	65,800,715	59,260,096
Jewellery	17,656,501	18,804,741	17,908,779
Machinery	7,385,840	8,332,365	7,323,021
Cutlery	2,591,221	2,231,599	2,048,291
Arms	13,631,549	15,080,409	19,773,601
Tools and other wrought metals	44,831,629	41,877,006	39,711,641
Haberdashery	146,705,337	130,558,989	85,307,155
Millinery and flowers.....	12,257,312	7,623,127	6,818,144
Furniture	13,632,325	10,830,261	10,923,134
Clothing (linen and other) ...	85,617,726	94,711,696	77,851,711
Books, engravings	19,118,730	18,468,184	14,663,231
Pottery	11,146,140	9,590,836	8,410,340
Paper and carton	18,427,881	14,773,558	13,614,939
Glass and crystal	17,662,034	15,401,322	16,921,339
Watches and clocks	8,457,977	6,175,569	4,369,921
Wines	240,900,326	209,999,830	195,922,795
Spirits	67,810,613	59,327,111	52,966,360
Olive oil	10,331,640	7,484,096	12,972,070
Other oils	8,091,909	6,019,211	4,371,049
Perfumery	14,660,483	12,051,795	12,874,410
Soap other than soap perfumery	7,200,578	6,088,621	5,955,152
Refined sugar	75,539,240	50,635,484	41,969,807
Home sugar	7,297,019	5,442,935	1,676,769
Madder	11,072,131	12,083,563	11,058,414
Extract of madder	6,672,363	11,090,151	10,496,682
Chemical productions	51,184,798	52,716,080	35,028,053
Oilcakes	7,391,111	10,955,483	8,424,336
Flax	9,568,182	11,611,606	3,146,870
Cotton.....	41,332,706	41,262,345	29,158,263
Timber	31,756,689	23,051,866	23,244,617
Resins	31,693,596	20,564,234	6,877,787
Table fruits.....	22,167,779	13,182,572	15,234,066
Oleaginous seed	11,026,601	9,238,757	5,591,830
Sowing seeds	11,845,235	11,853,965	8,747,790
Eggs	23,282,611	17,608,291	17,844,717
Butter	30,565,635	28,969,142	30,915,364
Wool	41,528,218	45,103,419	20,986,345
Silk	99,887,352	49,786,474	37,071,229
Cattle	18,429,472	18,075,808	20,003,133
Totals of the <i>forty-seven</i> } articles.....	2,210,263,383	1,908,297,450	1,630,965,570

V.—*The Import and Export Trade of the United Kingdom in 1861-62-63.*

THE following very complete account of our Commerce with Foreign Countries and with our own Colonies during the three years just passed is extracted from the *Daily News* of the 29th February :—

“The accounts of the Board of Trade relating to the trade and navigation of the United Kingdom have this year been looked for with unusual interest. The opening of the year 1863 found us already recovering from our first anxieties arising from the interruption of our long established intercourse with the cotton States of America. We are still dealing with the suffering masses of the population in the north, and we had had to contend with the results of the bad harvest of the preceding year. Money was cheap, but that cheapness was owing to the overthrow of an important part of our commercial relations, and to the consequent stoppage of trade. We stood upon the threshold of an uncertain future, and chances were to be counted on either side. By degrees, as weeks and months drew on, observations made from time to time led us to believe that we were running a prosperous course; and at last, now that we are in possession of the Board of Trade returns, it is easy to trace the marvellous development of our enterprise in the internal resources of the country no less than in the increasing extent of our relations with every part of the world.

“In the review of our imports the first place must be given to cotton and corn. We have, in the quantity of cotton imported during the past year, an increase amounting to 1,300,000 cwts. The largest quantities reached us from the British East Indies and from Egypt. The increase of the amount contributed by Egypt is most remarkable, although the absolute excess is greater from the East Indies. The increase over 1862 from Egypt is 309,000 cwts., and from the East Indies, 373,000 cwts. Brazil has sent us 7,000 cwts. less in 1863 than in 1862. From “other countries” we have received 689,000 cwts. more. The decrease from the United States is, as might be expected, very considerable; and the details of the imports are represented by the following figures :—

Raw Cotton.

	1861.	1862.	1863.
	cwt.	cwt.	cwt.
From the United States	7,316,469	120,752	57,090
„ Brazil	154,378	208,384	201,814
„ Egypt	365,108	526,897	835,289
„ British East Indies.....	3,295,004	3,505,844	3,878,757
„ other countries	91,619	316,456	1,005,472
Total	11,223,078	4,678,333	5,978,422

“The value of the cotton and cotton manufactures imported in 1862 was 24,500,000*l.*, and in the past year 44,000,000*l.* The separate value of cotton manufactures is also on the increase, standing as follows for 1861, 1862, 1863—783,000*l.*, 889,000*l.*, 1,035,000*l.*

“The comparison of the imports of corn, wheat, and flour during the years 1862 and 1863 is favourable to the latter. The arrivals in the former year amounted in value to 35,000,000*l.*, while those of 1863 only figure at 24,000,000*l.* The difference of 11,000,000*l.* is to be attributed to the excellent harvest of the past year.

"So soon as we approach the figures that indicate the value of articles used in manufacture as substitutes of one or of another sort for cotton, we begin to discover some of the causes of the general addition to our prosperity. Flax, hemp, jute, and other vegetable substances of the nature of hemp, wool, wool manufactured but not made up, all show a large increase, and explain why, if Lancashire has been in distress, Leeds, Huddersfield, Dundee, and other centres of trade in these goods, have flourished in an unprecedented degree. The impulse communicated to the manufacture of flax and of woollen goods has been very great, and it is possible, even probable, that a much greater development may yet take place. The value of the articles above enumerated, and imported during the three years 1861, 1862, 1863, stands thus:—14,020,000*l.*, 17,830,000*l.*, 18,000,000*l.* The comparison would have been still more striking had the imports of flax been on a moderate scale in 1862. The sudden demand of that year acting upon a supply that had accumulated during the time when the markets were over-filled with cotton fabrics produced, however, in that year, an increase of over 50 per cent. in the value of the arrivals, which have subsequently fallen off to the extent of 339,500 cwts., and to the value of 1,150,000*l.* The imports in hemp, in jute, in other substitutes, in wool, raw and unmanufactured, show a constant progressive increase, both in value and amount. The details as to wool show a gradual advance in the extent of the supply from Australia in the course of the three years, while from the British East Indies there has been some little fluctuation without material change in the quantity. The figures denoting the amount of worsted yarn imported in the course of 1861, 1862, 1863 exhibit a large and rapid increase—1,577,091 lbs., 2,244,701 lbs., 4,523,369 lbs.

"There is not much to remark in silk. In raw silk the figures of the supply have varied greatly in the three years. The amount received from China, Egypt, and from the East Indies is below that furnished in 1862. On the other hand, the manufactures from Belgium and from France are rather rapidly assuming large proportions.

"Our imports of metals show a constantly increasing quantity of copper ore from Spain, while there is a decrease in the supply from Cuba and from Chili. From Australia the returns of the three years give a constantly declining amount. The tons of ore for 1861, 1862, and 1863 are reported 74,163, 82,050, 80,693. The weight in cwts. of copper unwrought and partly wrought gives the following figures, those of each year being below the amount previously registered—315,760, 268,020, 243,240. Compared with 1862 the weight of bar iron unwrought is rather less, that of steel unwrought 1,000 tons more. Pig and sheet lead show an increase of 5,000 tons; spelter and zinc, 11,000 tons. Of tin our receipts have fallen off 33,000 cwts., and the value of silver ore 59,000*l.*

"The imports of living animals are on the increase, as might be expected from the growth of the population of this country; but it is to be remarked that in the number of hogs and swine there is a decrease. This falling off is, however, compensated by the additional weight of bacon and hams, the imports for 1861, 1862, and 1863 being, in cwts., 515,953, 1,345,694, and 1,877,813. Eggs are also brought into this country in enormous quantities, the numbers being for the three years 203 millions, 232 millions, and 267 millions respectively. The imports of Indian corn are nearly stationary. The value of the coffee imported during the three years is as follows:—1861, 2,424,346*l.*; 1862, 3,057,476*l.*; 1863, 3,586,526*l.* We receive each year a greater number of foreign-made gloves, the following being the figures for the three past years:—6,126,000, 6,876,000, 8,093,000. Foreign clocks also appear to find an increasing number of buyers in this country, 67,000 having been imported in excess of those brought over in 1862. In watches the decrease is 1,000. The import of paper from abroad is also of greater amount, the figures standing at 61,000 cwts. in 1861, 116,000 in 1862, and 133,000 in 1863; more than half the increased amount is from Belgium. Larger quantities of rags also arrive, the tons in 1861, 1862, and 1863 being respectively stated at 20,500, 24,000, and 45,500. The demand for guano exhibits no sign of falling off in face of arrivals that compare for the three years as follows: 178,423 tons, 141,636, and

233,574; with values, 1,781,222*l.*, 1,048,856*l.*, 2,371,648*l.* The hides imported are in larger amount. Tallow from South America is in greater quantity, but from Russia, from Australia as compared with last year, and from 'other countries,' the receipts have fallen off. The total figures are little changed from last year.

"One of the most remarkable features of the returns is perhaps that relating to the sudden growth of the demand for petroleum. We received in 1861 1,435 tons, in 1862 the amount had risen to 22,160, and last year it is returned at 35,345. This increase has not led to any preceptible diminution in the supply of other oils. The value for the three years is 16,357*l.*, 201,226*l.*, 595,124*l.*

"The arrivals of foreign hops are stated as follows: 1861, 149,000 cwts.; 1862, 133,000; 1863, 147,000. The imports of sugar for 1861, 1862, and 1863 are 10,399,405 cwts., 9,884,191, and 10,724,647, having values respectively 11,416,544*l.*, 10,243,363*l.*, and 10,839,085*l.* The increase in quantity is from the Mauritius; decreased arrivals having taken place from the East Indies, from Java and the Philippine Islands, and from Brazil, the decline in this latter case being from 120,000 cwts. in 1862 to 50,000 cwts. in 1863. The returns from the West Indies and from Cuba show little change. The value of our imports of tea has risen as follows:—1861, 5,894,732*l.*; 1862, 7,826,521*l.*; 1863, 9,108,287*l.*

"We appear disposed to celebrate the national prosperity by an increased consumption of wines. The total gallons are noted for 1861, 1862, and 1863 at 11, 12, and 14 millions. Portugal has supplied 3,594,885 gallons, and Spain 6,716,560; the increase over the previous year being in each case in round numbers about 500,000 gallons and 1,350,000 gallons. The taste for the productions of Naples and Sicily is apparently growing, as the figures, which had fallen from 332,210 gallons imported in 1861 to 211,489 in the following year, have again risen, and now stand at 377,131. The wines of France, Hungary, and South Africa have not attracted a larger share of attention.

"The total value of our imports has risen from 158,000,000*l.* in 1862 to 173,000,000*l.* in 1863. We have imported cotton and cotton manufactures to the value of 19,500,000*l.* in excess of the receipts of the previous year, and if we deduct 11,000,000*l.* as available by reason of the diminished quantity of wheat, corn, and flour purchased by this country, we have 8,500,000*l.* as representing the additional amount to which it has been worth our while to buy abroad other materials for consumption, for use, or for manufacture.

"The general details bearing on the supplies of raw goods assuredly indicate that cotton cultivation is being largely extended. We have convincing proofs from the East Indies, from Egypt, and from 'other countries.' In Brazil and in other parts of South America, as well as from Java and the Philippines, the returns in coffee, in sugar, and other products, appear to show that the cotton plantation is progressing on a scale calculated to interfere with the existing trade of those countries. The wonderful stimulus given by the high value to which cotton has attained is rapidly serving to uproot the plantations of coffee, cocoa, and sugar. With regard to Australia, it would appear that mining enterprise is on the wane; owing, perhaps, partly to the difficulties of access to the south coast. The stronger reason is, however, rather to be sought in the increased attention paid by the rapidly growing population of the country to the cultivation of the soil. It is impossible to dismiss the table of the imports of the past year without acknowledging that we have many indications of the shifting, not only of the direction, but also of the nature of our trade and commerce. It is to us to profit by the signs it conveys, and to take advantage of the earliest currents and of the most favourable winds.

"If in the imports we see evidence of the prosperity of the country, it is, however, in the account of the exports that we must seek for the details and causes of its development, and in the returns of 1863 these abound. The space at our command will hinder us from entering fully into this branch of the subject on the present occasion.

"Some countries in Europe appear to be profiting by their own cheaper labour in this present crisis to manufacture cotton goods for their own consumption on an extended scale, and in several cases we are exporting larger quantities of raw

material and fewer of manufactured goods. In the trade in iron manufactures also, in cutlery, and various kinds of hardware, there is reason to conclude that we are by degrees losing part of our market. It is to be regretted that we should by a neglect of the first symptoms incur such a risk. In the manufacture of tools it has been long known that we have been distanced by the Americans. The competition is now, and successfully, extending its ground. The colonial demand for shovels, axes, nails, and for many other articles, is rapidly increasing. Because the American shovels are polished, their axes of a particular fashion, and their nails of steel, they are justly preferred to ours, which are of inferior workmanship, shape, and material. We have ascertained that one house in Birmingham is paying 1,200*l.* per month for such goods, shipped from New York to Australia. A year ago their payments were 300*l.* per month on the same account. Now, even, the American manufacturers are unable to supply goods with sufficient rapidity, since they cannot obtain all the steel they require from England. In telegraph cable and apparatus also there is a falling off. It was stated a short time back that for the first time two important contracts had been taken in Belgium.

“Egypt and South Africa have taken apparel and slops to a lower value in the course of 1863, on a comparison with the previous year, but our exports to British North America have doubled. The total figures give 250,000*l.* increase. Empty bags appear to be in greater demand, as the figures denoting their value have risen from 388,724*l.* in 1862 to 555,785*l.* in the following year.

“The cotton yarn exported to Prussia, Hanover, and Hanse Towns, to Holland, and to France, is less in quantity and in value than in 1862. To Italy the quantity is less, but the value, as compared with 1862, greater. Similar results are noted as to Austria, China, and Hong Kong. To British India the quantity exported nearly equals that sent in 1861, the value is nearly double that of that year, and double the amount of 1862. The quantity and the value sent to Turkey are greater than in 1862. The total values for the three years are 9,272,761*l.*, 6,202,240*l.*, and 8,019,954*l.*

“Of cotton manufactures similar results are to be remarked. The Hanse Towns, Holland, and France, as well as the West Coast of Africa, took less both in quantity and value. Portugal, Italy, and Egypt took smaller quantities than in 1862, but of higher value. Austria took larger quantities, and, of course, for greater value. Turkey, in quantity, took fifteen per cent. more than in 1861, and thirty per cent. more than in 1862. The total values to Turkey for the three years stand—1,877,365*l.*, 2,192,490*l.*, and 3,630,391*l.* Our exports to Mexico were, in quantity, near to, and in value more than double that of those shipped in 1862, and the case of New Granada gives similar results. To Brazil the quantity sent was less, but the value was near that of 1862. To China and to South Africa the quantity, as well as the value, was less. The British East Indies took a quantity that exceeded the amount sent in 1862, but under the shipment of 1861. The total values were 36,124,685*l.* in 1861; 28,562,466*l.* in 1862; and 37,541,485*l.* in 1863.

“Beer and ales have been exported in greater quantities, and the increasing demand probably arises rather from the growing opulence of the English communities established in Australia and other British settlements than from any greater appreciation of those beverages by the foreigner. A similar comment may be made on the subject of English printed books, with the further remark that the additional export demand indicates an extended desire for knowledge of and acquaintance with the literature of the mother country, that may, later, produce good results. The export of coal scarcely shows any change. A steady increase in the amount of earthenware and porcelain sent abroad serves to prove the excellence and cheapness of those manufactures. Brazil and British North America have, however, taken less than in 1862. Furniture, millinery, English pickles and sauces, all figure in increased amounts.

“Our exports of hardwares exhibit a total increase, but the details are unsatisfactory. The United States, Brazil, and South Africa are countries to which we have during each of the past three years sent smaller quantities. In the case of

the United States the war may in part account for the difference, but the details in the export of cutlery have a similar character. Of steam engines and machinery, Australia, India, Brazil, and Spain have been our customers for a smaller value than in 1862. France, Russia, and 'other countries' have taken for larger amounts. In railway iron our exports show an increase. In telegraphic wire a decrease is noted. Our exports of copper have advanced in value to the extent of 1,500,000*l.* In woollen manufactures the greatest revival has taken place. Every item exhibits a considerable increase. Worsted stuffs alone figure at 8,327,729*l.*, against 5,881,789*l.* in 1862. Linen yarn and linen manufactures show increased exports to the value of 2,000,000*l.* The total increase in the value of cotton goods exported is 9,000,000*l.*, and the figures indicating the whole value of our exports during the years 1862 and 1863 are respectively 123,992,264*l.* and 146,489,768*l.*, giving an increase, in round numbers, of 22,000,000*l.* for the past year.

"A review of the various causes of the increase in our trade and prosperity, and of its consequences present and probable, would be full of interest now that the hurrying course of events is perhaps involving still greater changes than those actually recorded. But in view of the details now presented, we may confidently refer to the derangement of the cotton trade of this country, the bullion drain consequent on the research for raw material for new countries, and the loss resulting to the manufacturing interests involved, as items of but secondary importance in the history of the commerce of Great Britain in the year 1863."

MARRIAGES, BIRTHS, AND DEATHS IN GREAT BRITAIN.

No. I.—ENGLAND AND WALES.

MARRIAGES DURING THE THIRD QUARTER (JULY—SEPTEMBER) AND OF
BIRTHS AND DEATHS DURING THE FOURTH QUARTER
(OCTOBER—DECEMBER) OF 1863.

THE general result of the quarterly returns is favourable. The marriage-rate was above the average during the first nine months of the last year for which we have returns; and it is well known that they afford a good indication of the opinions which the people themselves have of their prospects in life. The births are returned for the last quarter of the year, and greatly exceed the average; while the deaths are also above the average, but to a much less extent.

The marriage returns of the last quarter are not in; but in spite of some discouragement it is evident that the year of the marriage of the Prince and Princess of Wales will be the anniversary of more than the usual number of such celebrations. The birth-rate of the year 1863 is the highest that has been observed in England; and the rate of mortality, owing chiefly to the prevalence of fever and of scarlatina, is also higher than is usual.

ENGLAND :—MARRIAGES, BIRTHS, *and* DEATHS, *returned in the Years*
1857-63, *and in the QUARTERS of those Years.*

Calendar YEARS, 1857-63 :—Numbers.

Years	'63.	'62.	'61.	'60.	'59.	'58.	'57.
Marriages No.	—	163,991	163,706	170,156	167,723	156,070	159,097
<i>Births</i> ,,	729,399	711,691	696,406	684,048	689,881	655,481	663,071
<i>Deaths</i> ,,	475,582	436,514	435,114	422,721	440,781	449,656	419,815

QUARTERS of each Calendar Year, 1857-63.

(I.) MARRIAGES :—*Numbers.*

<i>Qrs. ended last day of</i>	'63.	'62.	'61.	'60.	'59.	'58.	'57.
March .....No.	35,454	33,976	33,274	35,150	35,382	29,918	33,321
June ,,	44,058	40,771	42 012	43,777	42,042	39,890	41,267
Septmbr..... ,,	41,902	40,585	39,884	40,541	39,803	38,599	38,669
Decmbr. ,,	—	48,659	48,536	50,688	50,496	47,663	45,840

QUARTERS of each Calendar Year, 1857-63.

(II.) BIRTHS:—Numbers.

<i>Qrs. ended last day of</i>	'63.	'62.	'61.	'60.	'59.	'58.	'57.
March .....No.	186,653	182,005	172,933	183,180	175,532	170,959	170,430
June „	189,611	185,638	184,820	174,028	175,864	169,115	170,444
Septmbr. „	173,125	172,237	172,033	164,121	168,394	157,445	161,181
Decmbr. „	180,010	171,811	166,620	162,719	170,091	157,962	161,016

(III.) DEATHS:—Numbers.

<i>Qrs. ended last day of</i>	'63.	'62.	'61.	'60.	'59.	'58.	'57.
March .....No.	128,524	122,192	121,215	122,617	121,580	125,819	108,665
June „	118,375	107,555	107,558	110,869	105,631	107,142	100,046
Septmbr. „	112,384	92,225	101,232	86,312	104,216	98,142	100,528
Decmbr. „	116,299	114,542	105,109	102,923	109,354	118,553	110,576

MARRIAGES.—83,804 persons were married in the quarter that ended on September 30th, 1863. The weddings were 41,902, and exceed by 1,317 the weddings in the summer quarter of 1862, and by 2,018 the weddings in the summer preceding. The marriage-rate was 1·616 per cent., and this is above the average of ten preceding quarters. Thus the marriage meter indicates by its rise a steady improvement in the condition and prospects of the great body of the nation. London takes the lead, and is followed by all its surrounding divisions; in the interval between 1861 and 1863, the summer marriages rose from 7,322 to 8,031 in the metropolis; from 3232 to 3512 in Kent and the other south-eastern counties. A notable increase also appears in the returns of the counties of Hertford, Oxford, Bedford, and Cambridge; in Suffolk and Norfolk; while marriage decreased in Wilts, Devon, and Somerset; but increased in Gloucester, Bristol, Salop, Stafford, and Warwick, which are pervaded in different degrees by prosperous coal and iron works. Leicester, Lincoln, and Derby show an increase; Nottingham indicates some depression.

The marriages of Cheshire and Lancashire fell from 7,086 in the summer quarter of 1861 to 6,376 in the corresponding quarter of 1862, but in the summer quarter of the year 1863 rose again to 6,999, and thus gave the signal of reaction. Yorkshire sympathized with Lancashire,—especially in Huddersfield, Halifax, Bradford and Hull,—but the reaction in this great county was more complete; and the people of Leeds and Sheffield married in greater numbers than they did in either of the two preceding summer quarters. The marriages increased steadily in the northern counties; and the principality of Wales, either animated by loyalty, or by the heat of the iron trade, surpassed the metropolis in the rise of its marriage-rate, which exceeded by 12 per cent. the summer rate of Wales in 1861.

BIRTHS.—180,010 births were registered in the last quarter of the year 1863; and the birth-rate of the quarter was 3·461, which is considerably above the average-rate of the autumn quarter. Children are not born in equal numbers throughout the year; and, in general, births are at the highest in the winter quarter, and at the lowest in the autumn quarter of the year. But the seasons of the last year were exceptional, for the birth-rate was highest in the spring, and lowest in the summer quarter; and in all the quarters the rate was above the average.

ENGLAND:—*Annual Rates per Cent. of PERSONS MARRIED, BIRTHS, and DEATHS, during the YEARS 1857-63, and the QUARTERS of those Years.*

Calendar YEARS, 1857-63:—General Percentage Results.

YEARS	'63.	Mean '53-'62.	'62.	'61.	'60.	'59.	'58.	'57.
Estmtd. Popln. of England in thousands in middle of each Year....	20,554	—	20,337	20,119	19,903	19,687	19,471	19,257
Persons Married Per ct.	—	1'670	1'612	1'628	1'710	1'704	1'604	1'652
Births „	3'549	3'427	3'500	3'461	3'437	3'504	3'366	3'443
Deaths.... „	2'314	2'211	2'146	2'163	2'124	2'239	2'309	2'180

QUARTERS of each Calendar Year, 1857-63.

(I.) PERSONS MARRIED:—Percentages.

<i>Qrs. ended last day of</i>	'63.	Mean '53-'62.	'62.	'61.	'60.	'59.	'58.	'57.
March.... Per ct.	1'404	1'394	1'360	1'346	1'422	1'464	1'252	1'410
June..... „	1'722	1'693	1'610	1'678	1'766	1'716	1'646	1'722
Septmbr. „	1'616	1'607	1'582	1'570	1'614	1'602	1'570	1'592
Decmbr. „	—	1'975	1'890	1'906	2'012	2'026	1'934	1'880

(II.) BIRTHS:—Percentages.

<i>Qrs. ended last day of</i>	'63.	Mean '53-'62.	'62.	'61.	'60.	'59.	'58.	'57.
March.... Per ct.	3'698	3'594	3'644	3'500	3'707	3'631	3'576	3'604
June „	3'705	3'587	3'666	3'690	3'512	3'588	3'488	3'555
Septmbr. „	3'337	3'292	3'356	3'388	3'267	3'389	3'204	3'316
Decmbr. „	3'461	3'236	3'338	3'272	3'230	3'414	3'205	3'304

(III.) DEATHS:—Percentages.

<i>Qrs. ended last day of</i>	'63.	Mean '53-'62.	'62.	'61.	'60.	'59.	'58.	'57.
March.... Per ct.	2'546	2'498	2'447	2'453	2'481	2'515	2'631	2'298
June „	2'313	2'191	2'124	2'147	2'237	2'155	2'210	2'087
Septmbr. „	2'166	1'982	1'797	1'994	1'718	2'097	1'997	2'068
Decmbr. „	2'236	2'178	2'226	2'064	2'043	2'195	2'406	2'269

The account of 1863 makes the registered births in that year 729,399; and the birth-rate is 3·549, or 0·122 above the average (3·427) of the ten preceding years. The births exceeded by 17,708 the births in the year 1862, which was itself more prolific than any year that had gone before it.

It is shown in the Census Report that the number of wedded childbearing women is increasing faster than the general population, and this partly accounts for the increase of the birth-rate.

INCREASE OF POPULATION.—As the births were 180,010, the deaths 116,299, the ascertained natural increase of population in the last quarter of the year was 63,711. About 15,319 persons of English origin emigrated during the quarter. The emigrants from the United Kingdom of which the emigration commission furnishes an account amounted to 43,123, of whom about 2,850 were foreigners.

68,280 emigrants of English origin sailed from ports at which there are emigration agents in the year 1863; and of their number 36,312 sailed to the United States, 2,843 to the North American Colonies, 27,487 to the Australian Colonies, and 1,638 to other places. The emigrants from the United Kingdom in the year were 215,025,—124,433 males and 90,592 females,—after excluding 8,733 foreigners who sailed from British ports.

Allowing for unregistered births, and for emigration, the increase of the population of England was about 215,537 in the year; while the emigration from Ireland reduced the rest of the population, so that the probable increase of the United Kingdom was about 190,428.

The Registrar General of Ireland is now empowered to register births and deaths, and under his able superintendence the country will learn the exact numbers in that part of the United Kingdom during the ensuing year.

PRICES, PAUPERISM, AND THE WEATHER.—Fortunately for the country, while the price of meat remained nearly stationary, the prices of wheat and the prices of potatoes are kept down by the abundant crops, and this was as advantageous to the people at large, as it was to the monetary world. Beef by the carcass at the London markets was quoted at 4*d.* and 6¼*d.* in the autumn quarters of 1861, 1862, and 1863; mutton in the same quarters at 4¾*d.*, 5¼*d.*, 5*d.* and 6¾*d.*, 6¾*d.* and 7*d.* The average price of beef in the last quarter was 5½*d.*, of mutton 6*d.* a pound. Wheat in the corresponding autumn quarters was 59*s.* 3*d.*, 48*s.* 2*d.*, and 40*s.* 6*d.*; potatoes 6*s.*, 5*s.*, and 3*s.* 6*d.* a hundredweight wholesale. While potatoes were 137*s.* a ton in 1862, they fell to 101*s.* in 1863. Wheat in the last autumn was 40*s.* 6*d.*, to which it fell progressively from 59*s.* 3*d.* in the autumn of 1861. The average price of wheat was 55*s.* 5*d.* in 1862, and 44*s.* 8*d.* in 1863; the reduction was 19 per cent.; and the wheat entered for home consumption fell from nearly *ten* to less than *six* million quarters.

The paupers in the receipt of relief were 951,895 in 1862, and 993,491 in 1863; but the distress culminated in the first three months of the year, when 1,091,873 paupers were on the lists, which at the end of the year contained 935,013; a number less by 105,143 than the paupers of the corresponding quarter of the previous year. The change is still greater in the cotton districts, where, as we learn from the report of the Central Executive Committee, the numbers in the receipt of relief from the guardians and from local committees was 448,955 in the last week of November, 1862, and 170,850 in the last week of November, 1863. It is difficult to conceive what the distress and the mortality might have been in the manufacturing districts, had it not been for the Poor Law and for the charity of the nation, which has placed 1,323,493*l.* at the disposal of the able committee of which Lord Derby is the chairman.

The weather of the quarter presented some peculiarities. The temperature at the latter end of October and the beginning of December was colder than the average of the season at Greenwich; but the mean temperature of the season was 3°·2 above the average of 92 years. The rain in three months was 4·6 inches, which is 2·5 inches below the average. The water supply was therefore in some degree defective. Fog prevailed on 66 out of 92 days. Violent storms blew, particularly about the middle of the quarter, and swept the face of the earth.

CONSOLS, PROVISIONS, PAUPERISM, and TEMPERATURE, in each of the Nine
QUARTERS ended 30th December, 1863.

1	2	3	4		5	6	7		8	9
Quarters ending	Average Price of Consols (for Money).	Average Price of Wheat per Quarter in England and Wales.	Average Prices of Meat per lb. at Leadenhall and Newgate Markets (by the Carcase), with the <i>Mean</i> Prices.		Average Prices of Potatoes (York Regents) per Ton at Waterside Market, Southwark.	Pauperism.		Mean Tem- pera- ture.		
			Beef.	Mutton.		Quarterly Average of the Number of Paupers relieved on the <i>last day</i> of each week.	In-door.		Out-door.	
1861 31 Dec.	£ 93 $\frac{2}{8}$	s. d. 59 3	d. d. d. 4—6 $\frac{1}{4}$ 5 $\frac{1}{8}$	d. d. d. 4 $\frac{3}{4}$ —6 $\frac{3}{4}$ 5 $\frac{3}{4}$	s. s. s. 110—130 120	128,533	716,096	45.5		
1862 31 Mar.	93 $\frac{1}{8}$	60 1	4—6 $\frac{1}{4}$ 5 $\frac{1}{8}$	4 $\frac{3}{4}$ —6 $\frac{1}{2}$ 5 $\frac{5}{8}$	130—155 142	143,926	804,272	41.1		
30 June	93 $\frac{6}{8}$	56 8	4—6 5	5—7 6	180—200 190	127,863	781,858	53.3		
30 Sept.	93 $\frac{2}{8}$	56 10	4 $\frac{1}{4}$ —6 $\frac{1}{4}$ 5 $\frac{1}{4}$	5 $\frac{1}{4}$ —7 6 $\frac{1}{8}$	100—130 115	119,592	789,914	58.7		
31 Dec.	93 $\frac{5}{8}$	48 2	4—6 $\frac{1}{4}$ 5 $\frac{1}{8}$	5 $\frac{1}{4}$ —6 $\frac{3}{4}$ 6	90—110 100	132,663	907,493	45.0		
1863 31 Mar.	92 $\frac{4}{8}$	46 7	4—6 $\frac{1}{4}$ 5 $\frac{1}{8}$	5—7 6	120—130 125	143,661	948,212	42.6		
30 June	93 $\frac{1}{8}$	46 2	4 $\frac{1}{4}$ —6 $\frac{1}{4}$ 5 $\frac{1}{4}$	4 $\frac{3}{4}$ —6 $\frac{3}{4}$ 5 $\frac{3}{4}$	110—130 120	127,852	879,241	53.0		
30 Sept.	93	45 7	4 $\frac{1}{2}$ —6 $\frac{1}{4}$ 5 $\frac{3}{8}$	4 $\frac{3}{4}$ —6 $\frac{3}{4}$ 5 $\frac{3}{4}$	70—105 87	120,189	819,795	58.8		
31 Dec.	92 $\frac{7}{8}$	40 6	4—6 $\frac{1}{4}$ 5 $\frac{1}{8}$	5—7 6	60—80 70	130,072	804,941	46.8		

Col. 6 is deduced from the Weekly Tables published in the *Economist*. The average of the highest and of the lowest weekly prices is here shown in cols. 4, 5, and 6, and not the absolute highest or lowest price quoted at any period of the quarter.

Cols. 7 and 8 are deduced from the Returns of the Poor Law Board. The Returns now relate to 655 Unions, &c., comprising a population of 19,885,921 (in 1861), and do not include the paupers of parishes, &c., incorporated under Gilbert's Act, or still under the 43rd Elizabeth; Lunatic Paupers in Asylums and Vagrants relieved in the above Unions are also excluded. They amounted on January 1st, 1860, to—Insane Persons, 31,554; Vagrants, 1,542. The rest of the paupers on that day amounted to 817,800.

DEATHS; AND THE STATE OF THE PUBLIC HEALTH.—The deaths in the last 92 days of the year were 116,299; and the mortality was at the rate of 2.236 per cent., or .058 above the quarter's average. The mortality was at the rate of 2.462 in the chief town districts, and of 1.946 in the country and small districts; the mortality in the towns being near its average, and in the country above its average.

ANNUAL RATE of MORTALITY per Cent. in TOWN and COUNTRY DISTRICTS of ENGLAND in each Quarter of the Years 1863-61.

	Area in Statute Acres.	Population Enumerated.		Quarters ending	Annual Rate of Mortality per Cent. in each Quarter of the Years			
		1851.	1861.		1863.	Mean '53-62.	1862.	1861.
In 142 Districts, and 56 Sub-districts, comprising the <i>Chief Towns</i>	3,287,151	9,155,964	10,930,841	March	2·705	2·688	2·661	2·658
				June....	2·478	2·336	2·265	2·271
				Sept. ..	2·404	2·239	1·977	2·193
				Dec.	2·462	2·454	2·512	2·291
				Year ...	2·512	2·429	2·354	2·353
In the remaining Districts and Sub- districts of Eng- land and Wales, comprising chiefly <i>Small Towns</i> and <i>Country Parishes</i> }	34,037,732	8,771,645	9,135,383	Year ...	2·064	1·970	1·894	1·938
				March	2·343	2·287	2·184	2·210
				June	2·102	2·031	1·949	1·999
				Sept. ..	1·864	1·694	1·573	1·753
				Dec.	1·946	1·866	1·870	1·790

Note.—The three months January, February, March, contain 90, in leap year 91 days; the three months April, May, June, 91 days; each of the last two quarters of the year 92 days. For this inequality a correction has been made in the calculations, also for the difference between 365 and 365·25 days, and 366 and 365·25 days in leap year.

475,582 deaths were registered in the year; and the mortality was at the rate of 2·314 per cent.; the average of the preceding ten years being 2·211. The death-toll instead of 22 was 23 in 1,000; so of every 1,000 living *one* was sacrificed in the year. The mortality of the year in the chief town districts was at the rate of 25, in the rest of the country 21, per 1000.

Average Annual Rate of Mortality in the Eleven Divisions of England in the Ten Years 1851-60, and in each of the Years 1862 and 1863.

Divisions.	Average Annual Rate of Mortality per 1,000 in Ten Years, 1851-60.	Deaths Annually to 1,000 Living.	
		1862.	1863.
I. London	23·63	23·38	24·83
II. South-Eastern counties	19·55	18·09	19·88
III. South Midland „	20·44	19·16	21·68
IV. Eastern counties	20·58	19·28	22·00
V. South-Western counties	20·01	18·74	21·51
VI. West Midland „	22·35	21·07	22·69
VII. North Midland „	21·10	19·52	21·68
VIII. North-Western „	25·51	25·07	25·84
IX. Yorkshire	23·09	23·23	25·18
X. Northern counties	21·99	22·42	23·30
XI. Monmouthshire and Wales.....	21·28	20·74	21·01

The number of deaths was higher in every division than it was in the corresponding quarter of 1861 ; and also in 1862, except in the West Midland division, in the North Western (Lancashire and Cheshire), in Yorkshire, and in the Northern division, where the deaths were less numerous than they had been. The deaths in the South Eastern division rose from 8,427 in the last quarter of 1861 to 9,269 in the corresponding quarter of 1863 ; in the South Midland division from 6,176 to 6,964 ; in the Eastern division from 5,552 to 6,011 ; in the South Western division from 8,474 to 9,716, where Wilts and Cornwall were the greatest sufferers.

Yet in Salisbury only 24 deaths were registered out of a population of 9,039. This city was formerly one of the unhealthiest small cities in the kingdom ; and in the ten years 1841-50 the mortality was at the rate of 28 in 1,000 ; cholera with diarrhoea was fatal in the epidemic of 1849 to 20 in every 1,000 of its inhabitants. Aroused into activity on the approach of the second cholera epidemic, a Local Board of Health was appointed, and proceeded to do its work effectually. The open drains running through the streets were filled up, a *complete system* of drainage was carried out, and works were established which provide a plentiful supply of water. These municipal reforms, commenced in 1853, were completed in 1854 ; and the death-toll has been levied with less severity ever since the year 1855. The mortality in the ten years 1851-60 fell to 24 in 1,000, and though higher in the first was lower in the last five years of this period. The mortality was at the rate of 27 in 1862, and 15 per 1,000 in 1863. The full effects of sanitary improvements only become apparent after some years ; and the disturbance of the seeds of disease is sometimes followed by epidemics, as was apparently the case in Salisbury, where the mortality was at the rate of 29 and 27 in 1,000 during 1854 and 1855 ; while in 1856 the mortality fell to 22, and after some fluctuation to 18 in 1860 and 1861. This happy healthy state was disturbed by epidemics of measles and whooping-cough in 1862, when 240 people died from all causes, and the mortality was at the rate of 27 in 1,000. In the year 1863, the vigilance of the Board of Health was again rewarded, and the mortality fell to 15 in 1,000 ; thus justifying the sanguine Registrar when he says :

“ In my previous report I stated that in my opinion the low rate of mortality was owing to the completeness of the sanitary improvements lately carried into effect, and I attribute the continued favourable state of the public health in this district to the same cause. It is a remarkable fact, that in a population of 9,039 the deaths have been only 44 in a half-year.”

At the rates still prevailing in other towns the deaths in a half-year would have been 113 ; thus 79 lives were saved. The Sick City, healed in his county, is a cheering memorial near the ashes of Lord Herbert, which lie above Salisbury, on a tributary of the Avon. But, as experience proves, the health of a city, like the sacred fire on the altar, requires the constant vigilance of its guardians, otherwise its flames expire.

Staffordshire and Warwickshire, in the West Midland counties, as well as Yorkshire and the Northern division, experienced a higher rate of mortality in the last quarter than they did in the corresponding quarter of 1861, but a lower rate than they experienced in 1862. This was also the case with Lancashire and Cheshire.

The mortality of the North-western division (Lancashire and Cheshire), instead of being 17, was nearly 26 (25·51) in 1,000 during the ten years 1851-60 ; it was 25·07 in 1862, and 25·84, or a little above the average in 1863. The people of Lancashire have been so busy in clothing the world that their workpeople have been neglected, and been destroyed by thousands every year, for the want of the most elementary sanitary conveniences, which we may hope will now be provided under the Public Works Act.

ENGLAND: — MARRIAGES *Registered in Quarters ended 30th September, 1863-61; and BIRTHS and DEATHS in Quarters ended 31st December, 1863-61.*

1 DIVISIONS. (England and Wales.)	2 AREA in Statute Acres.	3 POPULATION, 1861. (Persons.)	4 5 6 MARRIAGES in Quarters ended 30th September,		
			'63.	'62.	'61.
			No.	No.	No.
ENGLD. & WALES.... Totals	37,324,883	20,066,224	41,902	40,585	39,884
I. London	77,997	2,803,989	8,031	8,067	7,322
II. South-Eastern	4,065,935	1,847,661	3,512	3,489	3,232
III. South Midland	3,201,290	1,295,497	2,152	2,032	1,972
IV. Eastern	3,214,099	1,142,580	1,651	1,639	1,560
V. South-Western	4,993,660	1,835,714	3,211	3,351	3,364
VI. West Midland	3,865,332	2,436,568	5,064	4,872	4,631
VII. North Midland	3,540,797	1,288,928	2,250	2,113	2,130
VIII. North-Western	2,000,227	2,935,540	6,999	6,376	7,086
IX. Yorkshire	3,654,636	2,015,541	4,386	4,128	4,245
X. Northern	3,492,322	1,151,372	2,294	2,285	2,241
XI. Monmthsh. & Wales	5,218,588	1,312,834	2,352	2,233	2,101

7 DIVISIONS. (England and Wales.)	8 9 10 BIRTHS in Quarters ended 31st December.			11 12 13 DEATHS in Quarters ended 31st December,		
	'63.	'62.	'61.	'63.	'62.	'61.
	No.	No.	No.	No.	No.	No.
ENGLD. & WALES.... Totals	180,010	171,811	166,620	116,299	114,542	105,109
I. London	27,127	23,783	23,567	18,857	17,717	16,173
II. South-Eastern	15,524	15,057	14,439	9,269	8,895	8,427
III. South Midland	11,058	10,628	10,221	6,964	6,389	6,176
IV. Eastern	9,187	9,145	8,701	6,011	5,690	5,552
V. South-Western	14,588	14,824	13,728	9,716	8,826	8,474
VI. West Midland	22,144	21,329	20,961	13,303	14,306	11,763
VII. North Midland	11,204	10,980	10,745	7,058	6,401	6,065
VIII. North-Western	27,398	26,444	26,156	19,532	20,186	19,227
IX. Yorkshire	19,514	18,426	17,575	12,437	12,834	10,928
X. Northern	11,374	10,830	10,458	6,558	6,901	6,206
XI. Monmthsh. & Wales	10,892	10,365	10,069	6,594	6,397	6,118

REMARKS ON THE WEATHER

DURING THE QUARTER ENDING 31ST DECEMBER, 1863.

By JAMES GLAISHER, ESQ., F.R.S., &c., *Sec. of the British Meteorological Society.*

Till October 9th the temperature was alternately warm and cold. On October 10th a warm period set in, and continued to the 22nd inclusive, the average daily excess of mean temperature was nearly 5° ; the weather then changed, and till November 13th the weather was variable with respect to warmth, some days being in excess of temperature to a considerable amount, and others below, but the latter preponderated; and the daily deficiency of warmth for the 22 days ending November 13th was rather more than 1° daily. From this time to the end of the quarter there was an excess of temperature over the average, amounting, from these 48 days ending December 31st, to $4^{\circ}\frac{1}{2}$ daily. The same excess of temperature extended over the country. The period from October 30th to the beginning of December was unusually stormy, even for the time of the year. Successive gales of wind occurred till November 4th. Other severe storms took place all over the country on November 21st and December 2nd and 3rd. On October 30th the heaviest pressure within the preceding 20 years took place, viz., one of $29\frac{1}{2}$ lbs. on the square foot. On December 3rd, at Greenwich, at 7h. 30m. A.M., the barometer reading was 28.79 in., and remained at this reading for 42 minutes, then turned to increase, and was 30.22 in. by noon on the 4th; at Castleton the increase was 1.1 in. in 13 hours; at Cockermouth, between December 3rd, at 9 A.M., and December 4th, at 9 A.M., was 1.34 in. So that the increase from the 3rd to the 4th all over the country was extraordinary. The variations of atmospheric pressures between October 27th and December 5th were very frequent and to large amounts.

The mean temperature of October was $51^{\circ}.6$, being nearly the same as in 1862, when it was $51^{\circ}.8$, and less than in 1861, when it was $54^{\circ}.9$.

The mean temperature of November was $45^{\circ}.7$, being higher than any November since 1857, which was $45^{\circ}.8$.

The mean temperature of December was $43^{\circ}.2$, being $0^{\circ}.4$ less than in 1862; higher than in 1861, which was $41^{\circ}.0$; and higher than in any other year back to 1857, which was $45^{\circ}.1$.

The mean high day temperature in October was that of the average for the month, in November was 2° in excess, and in December $3^{\circ}.4$ in excess above the average.

The mean low night temperature in the three months was in excess to the amount of $2^{\circ}.1$ in October, $2^{\circ}.9$ in November, and $1^{\circ}.1$ in December.

Therefore the days in October were of the average value, and were warm in both November and December, and the nights were warm throughout the quarter.

The mean temperature of the air in October was 1° , in November was $1^{\circ}\frac{3}{4}$, and in December was 3° nearly in excess over their respective averages of the preceding 22 years.

The mean temperature of the dew point was in excess in each month of the quarter, to the amount of $1^{\circ}\frac{1}{4}$, $2^{\circ}\frac{1}{2}$, and $1^{\circ}\frac{1}{2}$ in each month respectively.

The degree of humidity of the air was very nearly the same as its average value in the months of October and November, and was below its average in December.

The pressure of the atmosphere was a little below its average in October, and above in November and December.

The fall of rain at Greenwich was below its average in each month, and to the amount of $2\frac{1}{2}$ inches upon the quarter.

The mean temperature of the air at Greenwich in the three months ending November, constituting the three autumn months, was $50^{\circ}\cdot3$, being $0^{\circ}\cdot9$ above the average of the preceding 92 years.

		Temperature of										Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.	
		Air.			Evaporation.		Dew Point.		Air—Daily Range.						
1863.	Months.	Mean.	Diff. from Average of 92 Years.	Diff. from Average of 22 Years.	Mean.	Diff. from Average of 22 Years.	Mean.	Diff. from Average of 22 Years.	Mean.	Diff. from Average of 22 Years.	Water of the Thames	Mean.	Diff. from Average of 22 Years.	Mean.	Diff. from Average of 22 Years.
		o	o	o	o	o	o	o	o	o	o	In.	In.	Gr.	Gr.
	Oct.	51·6	+2·1	+1·1	49·7	+1·2	47·8	+1·4	12·7	-2·0	54·8	·333	+·016	3·7	0·0
	Nov.	45·7	+3·3	+1·7	44·2	+2·6	42·4	+2·6	10·8	-0·9	48·5	·271	+·019	3·1	+0·3
	Dec.	43·2	+4·2	+2·9	41·1	+2·3	38·5	+1·4	11·8	+2·3	44·0	·233	+·010	2·7	+0·1
	Mean.....	46·8	+3·2	+1·9	45·0	+2·0	42·9	+1·8	11·8	-0·2	49·1	·279	+·015	3·2	+0·1

		Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Horizontal Movement of the Air.	Reading of Thermometer on Grass.					
		Mean.	Diff. from Average of 22 Years.	Mean.	Diff. from Average of 22 Years.	Mean.	Diff. from Average of 22 Years.	Amnt.	Diff. from Average of 46 Years.		Number of Nights it was				Lowest Reading at Night.	Highest Reading at Night.
											At or below 30°.	Between 30° and 40°.	Above 40°.			
1863.	Months.									Miles.						
	Oct.	87	0	In. 29·638	In. -·061	Gr. 537	Gr. - 2	In. 1·7	In. -1·1	226	1	14	16	o 23·0	o 50·8	
	Nov.	88	- 1	29·870	+·121	547	- 1	1·8	-0·6	221	11	12	7	17·7	48·8	
	Dec.	83	- 6	29·942	+·126	552	0	1·1	-0·8	299	16	10	5	16·2	43·0	
	Mean.....	86	- 2	29·817	+·062	545	- 1	Sum 4·6	Sum -2·5	Mean 249	Sum 28	Sum 36	Sum 28	Lowest 16·2	Highest 50·8	

Note.—In reading this table it will be borne in mind that the sign (—) minus signifies below the average, and that the sign (+) plus signifies above the average.

The Earthquake of October 6th was felt at Helston at 3 h. 30 m. A.M.; at Truro; at Exeter at 3 h. 8 m. A.M. (local time); at Clifton at 3 h. 15 m. A.M.; at Great Berkhamstead the shock was very slight; at Aspley at 3 h. 25 m. or 30 m., as a slight shock; at Lampeter at 3 h. 20 m. A.M.; at Grantham at 3 h. 28 m. A.M.; and at Eccles, near Manchester, at 3 h. 20 m. A.M.

ENGLAND :—*Meteorological Table, Quarter ended 31st Dec., 1863.*

1	2	3	4	5	6	7	8	9
NAMES OF STATIONS.	Mean Pressure of Dry Air reduced to the Level of the Sea.	Highest Reading of the Thermo- meter.	Lowest Reading of the Thermo- meter.	Range of Tem- perature in the Quarter.	Mean Monthly Range of Tem- perature.	Mean Daily Range of Tem- perature.	Mean Tem- perature of the Air.	Mean Degree of Hu- midity.
	in.	°	°	°	°	°	°	
Guernsey	29·731	62·5	37·5	25·0	17·5	5·8	45·7	86
Exeter	29·703	63·3	32·5	30·8	24·6	8·0	44·4	84
Ventnor	29·748	61·0	30·0	31·0	22·1	6·8	44·7	82
Barnstaple	29·687	65·0	30·0	35·0	27·0	9·3	45·2	86
Royal Observatory	29·708	66·5	26·5	40·0	31·0	11·8	42·9	86
Royston	29·738	65·3	25·6	39·7	31·4	12·3	42·1	87
Lampeter	29·706	63·6	24·5	39·1	28·9	11·1	43·9	92
Norwich	29·644	65·0	31·0	34·0	27·3	10·7	43·8	86
Diss (Norfolk) ...	29·717	66·0	27·0	39·0	31·3	10·6	41·7	85
Belvoir Castle ...	29·630	64·0	25·5	38·5	31·6	12·6	42·7	91
Liverpool	29·665	60·2	33·3	26·9	21·2	7·7	40·7	81
Wakefield	29·632	62·7	25·0	37·7	32·2	12·9	42·6	89
Stonyhurst	29·610	62·6	25·7	37·9	26·9	9·6	41·8	87
North Shields ...	29·625	60·0	25·2	34·8	27·2	9·2	40·4	87
Alnwick	29·584	63·0	24·0	39·0	29·3	12·2	40·3	86

10	11	12	13	14	15	16	17	18
NAMES OF STATIONS.	WIND.					Mean Amount of Cloud.	RAIN.	
	Mean estimated Strength.	Relative Proportion of					Number of Days on which it fell.	Amount collected.
		N.	E.	S.	W.			
								in.
Guernsey	1·8	6	5	10	10	5·3	50	12·4
Exeter	0·9	5	4	9	13	6·5	58	10·0
Ventnor	—	6	5	5	15	—	46	9·5
Barnstaple	1·5	5	5	11	10	4·8	66	11·5
Royal Observatory	—	3	4	11	17	7·0	—	4·6
Royston	—	2	3	13	13	5·8	58	5·2
Lampeter	0·8	4	4	12	11	7·9	33	14·9
Norwich	—	3	3	13	12	—	31	6·6
Diss (Norfolk) ...	—	3	4	12	12	6·7	40	6·4
Belvoir Castle ...	1·3	1	1	15	14	5·5	33	6·9
Liverpool	1·4	4	4	11	12	7·7	55	9·2
Wakefield	1·8	4	6	9	12	6·8	55	7·0
Stonyhurst	0·9	7	4	7	13	7·6	70	19·6
North Shields ...	2·0	5	2	7	17	6·6	47	8·0
Alnwick	2·1	2	5	4	20	4·3	41	8·8

No. II.—SCOTLAND.

MARRIAGES, BIRTHS, AND DEATHS IN THE QUARTER
ENDED 31ST DECEMBER, 1863.

This Return comprises the number of BIRTHS, DEATHS, and MARRIAGES entered on the registers of the 1,009 districts into which Scotland is divided for the purposes of registration during the quarter ending 31st December, 1863. From the returns received, it would appear that the births and deaths were above their usual proportion, while the marriages were in the same proportion as during the corresponding quarter of the eight previous years.

BIRTHS.—26,583 births were registered in Scotland during the quarter ending 31st December, 1863, being in the annual proportion of 343 births in every 10,000 of the estimated population, or 1 birth to every 29 persons. This, though higher than the average birth-rate of the corresponding quarter during the eight previous years, which was at the rate of 334 births in every 10,000 of the estimated population, was equalled in 1861, and exceeded in 1859. This birth-rate is considerably higher than that of England, which, on a ten years' average, only shows a proportion of 323 births to every 10,000 of the estimated population.

The usual difference was observed between the proportion of births in the town and country districts. Thus, in the 126 town districts (which embrace almost all the towns with populations of 2,000 and upwards), 15,286 births were registered; while in the 883 country districts (embracing the remainder of the population of Scotland) 11,297 births occurred; thus indicating an annual proportion of 373 births for every 10,000 persons in the town districts, but only 309 births for an equal population in the rural districts.

Of the 26,583 births, 23,801 were legitimate, and 2,782 illegitimate, being in the proportion of 10·4 per cent., of the births illegitimate, or 1 illegitimate in every 9·5 births. As usual, the proportion of illegitimate births was lower in the towns than in the rural districts, for while 10·3 per cent. of the births were illegitimate in the towns, 10·6 per cent. were so in the country districts. The North and North-western divisions of Scotland furnished, as usual, the smallest proportion of illegitimate births; the North-eastern and Southern divisions the highest proportion; for, while the former only yielded respectively 4·9 and 5·5 per cent. of the births as illegitimate, the latter yielded respectively 16·5 and 15·2 per cent. as illegitimate.

Of the children born during the quarter, 13,714 were boys, and 12,869 girls; showing the very high proportion of 107 boys for every 100 girls at birth.

DEATHS.—17,998 deaths were registered in Scotland during the fourth quarter of the year 1863, being in the annual proportion of 232 deaths in every 10,000 of the estimated population. This is an exceeding high death-rate and very greatly above the average, which, for the corresponding quarter of the eight previous years, was only at the rate of 204 deaths in every 10,000 of the estimated population.

The deaths in the town districts were greatly more numerous in proportion to the population than in the rural districts. Thus, in the 126 town districts 11,592 deaths were registered; but only 6,406 deaths in the 883 rural districts; indicating an annual proportion of 283 deaths in every 10,000 persons in the towns, but only 175 deaths in a like population in the country districts.

Of the deaths, 5,583 occurred during October, 5,996 during November, and 6,419 during December; so that the daily deaths in Scotland amounted to 180 during October, to 199 during November, and to 207 during December.

INCREASE OF THE POPULATION.—As the births numbered 26,583, and the deaths 17,998, the natural increase of the population during the quarter, through

the excess of births over deaths, amounted to 8,585 persons. From a return furnished to the Registrar-General by the Emigration Commissioners, it appears that 43,123 persons emigrated from the ports of Great Britain and Ireland during the quarter, of which number 3,050 were ascertained to be of Scottish origin. If to that number 154 be added as the proportion of persons whose nationality was not distinguished, the total Scottish emigration during the quarter would amount to 3,204 persons; and being deducted from the excess of births over deaths, would leave 5,381 as the increase of the population during the quarter.

MARRIAGES.—6,577 marriages were registered in Scotland during the quarter, being in the annual proportion of 84 marriages in every 10,000 persons of the estimated population. This is the exact average of the corresponding quarter during the eight previous years. This speaks well for the general prosperity of the country, and shows the opinion of the people as to the non-existence of any depression in trade at present.

As with the births and deaths, the proportion of marriages was much higher in the town than in the rural districts. Thus, in the 126 town districts 3,873 marriages were registered, but only 2,704 in the 883 rural districts; showing an annual proportion of 94 marriages in every 10,000 persons in the town districts, but only 74 marriages in a like population in the rural districts.

HEALTH OF THE POPULATION.—The population has been very unhealthy during the quarter, and the mortality high above the average of the corresponding quarter of the eight previous years. Scarlet fever and diphtheria have been prevalent and fatal over almost every part of Scotland, while influenza, bronchitis, and sore throats (not diphtheritic) have been very general. Continued fever also in its varied forms has been prevalent; confined to no locality, however, but seemingly as prevalent and fatal in the detached cottage as in the crowded town. Small-pox seems to be almost everywhere on the decline; and a few of the Registrars, in noticing the ravages of the late epidemic, draw attention to the fact, that the deaths almost alone occurred among those who had not been vaccinated.

WEATHER.—The weather, as a whole, has been unusually mild during the quarter, and the year closed without frost or snow beyond a very few days' continuance, excepting in the high lying districts. Strong, mild, damp winds from the south-west were the prevailing atmospheric currents, and so long as these continue, it is well known we have neither frosts nor snows occur—a fact which proves how dependent we are on these atmospheric currents for the mildness of our British winters. Rain fell on 52 days during the quarter, or seven days more than usual; its depth also was great, amounting to 12·64 inches, or 1·53 inch more than the mean of former years. There was also less sunshine, by reason of the greater amount of cloud; the temperature was consequently scarcely so high during the day, but was amply compensated for during the night, by these being less cold than usual; so that the mean temperature of the quarter was 2°·2 higher than the average of the fourth quarter during the eight previous years.

The mean barometric pressure, corrected and reduced to the sea level, and to 32° of temperature, was 29·657 inches in October, 29·825 inches in November, and 29·840 inches in December. The mean temperature was 46°·8 during October, 43°·1 during November, and 40°·8 during December. The mean daily range of temperature was 10°·6 during October, and 9°·8 during both November and December, an unusually low range for the quarter. The mean degree of humidity of the air was 89 during October and November, and 88 during December, full saturation of the air with moisture being 100. The number of days on which rain fell was 19 during October, 15 during November, and 18 during December; with a mean depth of 4·11 inches during October, 3·52 inches during November, and 5·01 inches during December. Winds with an easterly point blew 9 days during October, 5 during November, and 4 during December. Winds with a westerly point blew 16 days during October, 17 days during November, and 23 during December.

SCOTLAND:—MARRIAGES, BIRTHS, and DEATHS *Registered in the Quarter ended 31st December, 1863.*

1	2	3	4	5	6
DIVISIONS. (Scotland)	AREA in Statute Acres.	POPULATION, 1861. (Persons.)	Marriages.	Births.	Deaths.
		No.	No.	No.	No.
SCOTLAND.....Totals	19,639,377	3,062,294	6,577	26,583	17,998
I. Northern	2,261,622	130,422	231	897	468
II. North-Western	4,739,876	167,329	240	1,139	728
III. North-Eastern	2,429,594	366,783	835	3,104	1,650
IV. East Midland	2,790,492	523,822	1,122	4,297	2,865
V. West Midland	2,693,176	242,507	432	1,894	1,304
VI. South-Western	1,462,397	1,008,253	2,323	9,947	7,699
VII. South-Eastern	1,192,524	408,962	962	3,671	2,331
VIII. Southern	2,069,696	214,216	432	1,634	953

No. III.—GREAT BRITAIN.

SUMMARY of MARRIAGES, *in the Quarter ended 30th September, 1863; and*
BIRTHS and DEATHS, *in the Quarter ended 31st December, 1863.*

COUNTRIES.	AREA in Statute Acres.	POPULATION, 1861. (Persons.)	Marriages.	Births.	Deaths.
		No.	No.	No.	No.
England and Wales.....	37,324,883	20,066,224	41,902	180,010	116,299
Scotland	19,639,377	3,062,294	6,577	26,583	17,998
GREAT BRITAIN.....	56,964,260	23,128,518	48,479	206,593	134,297

Trade of United Kingdom, 1863-62-61.—*Distribution of Exports from United Kingdom, according to the Declared Real Value of the Exports; and the Computed Real Value (Ex-duty) of Imports at Port of Entry, and therefore including Freight and Importer's Profit.*

Merchandise (<i>excluding Gold and Silver</i>), Imported from, and Exported to, the following Foreign Countries, &c. [000's omitted.]	First Nine Months.					
	1863.		1862.		1861.	
	Imports from	Exports to	Imports from	Exports to	Imports from	Exports to
I.—FOREIGN COUNTRIES:	£	£	£	£	£	£
Northern Europe; viz., Russia, Sweden, Norway, Denmark & Iceland, & Heligoland	11,790,	3,731,	12,402,	3,279,	10,299,	4,014,
Central Europe; viz., Prussia, Germany, the Hanse Towns, Holland, and Belgium	18,357,	15,981,	17,709,	16,072,	16,038,	16,015,
Western Europe; viz., France, Portugal (with Azores, Madeira, &c.), and Spain (with Gibraltar and Canaries)	22,256,	11,975,	19,259,	11,168,	18,039,	10,661,
Southern Europe; viz., Italy, Austrian Empire, Greece, Ionian Islands, and Malta	3,002,	6,019,	3,481,	5,481,	3,056,	6,037,
Levant; viz., Turkey, with Wallachia and Moldavia, Syria and Palestine, and Egypt	15,882,	7,632,	11,982,	4,834,	9,536,	4,371,
Northern Africa; viz., Tripoli, Tunis, Algeria, and Morocco	385,	145,	316,	143,	427,	124,
Western Africa	927,	452,	1,168,	718,	1,004,	615,
Eastern Africa; with African Ports on Red Sea, Aden, Arabia, Persia, Bourbon, and Kooria Moorla Islands	31,	66,	—	57,	6,	38,
Indian Seas, Siam, Sumatra, Java, Philippines; other Islands	1,182,	861,	813,	1,041,	847,	1,500,
South Sea Islands	20,	136,	—	—	—	93,
China, including Hong Kong	10,956,	2,921,	8,865,	2,544,	6,913,	4,107,
United States of America	14,669,	10,492,	18,502,	10,468,	43,631,	6,803,
Mexico and Central America	1,445,	1,489,	754,	559,	477,	647,
Foreign West Indies and Hayti	41,51,	2,559,	3,709,	2,383,	3,670,	1,772,
South America (Northern), New Granada, Venezuela, and Ecuador	630,	1,342,	661,	743,	433,	1,105,
„ (Pacific), Peru, Bolivia, Chili, and Patagonia	4,524,	1,867,	3,803,	1,220,	4,130,	1,929,
„ (Atlantic) Brazil, Uruguay, and Buenos Ayres	5,251,	4,103,	4,278,	3,869,	3,248,	5,021,
Whale Fisheries; Grnlnd., Davis' Straits, Southn. Whale Fishery, & Falkland Islands	28,	11,	50,	10,	19,	6,
<i>Total.—Foreign Countries</i>	115,486,	61,782,	107,752,	64,589,	121,774,	64,858,
II.—BRITISH POSSESSIONS:						
British India, Ceylon, and Singapore	30,021,	14,711,	20,599,	12,690,	15,803,	13,587,
Austral. Cols.—New South Wales and Victoria	3,834,	6,044,	4,311,	5,920,	4,073,	5,819,
„ „ So. Aus., W. Aus., Tasm., and N. Zea.	2,039,	2,545,	1,818,	1,901,	1,741,	1,648,
British North America	5,229,	4,262,	5,208,	3,536,	5,497,	3,461,
„ W. Indies with Btsh. Guiana & Honduras	6,544,	2,689,	5,391,	2,289,	4,832,	1,784,
Cape and Natal	1,250,	1,109,	937,	1,424,	818,	1,479,
Br. W. Co. of Af., Ascension and St. Helena	121,	227,	142,	299,	120,	257,
Mauritius	1,640,	340,	902,	410,	1,814,	410,
Channel Islands	482,	585,	494,	614,	491,	492,
<i>Total.—British Possessions</i>	51,160,	32,512,	39,802,	29,083,	35,189,	28,937,
<i>General Total</i>£	166,646,	94,294,	147,554,	93,672,	156,963,	93,795,

IMPORTS.—(United Kingdom.)—First Eleven Months (*January—November*), 1863-62-61-60-59.—*Computed Real Value (Ex-duty), at Port of Entry (and therefore including Freight and Importer's Profit), of Articles of Foreign and Colonial Merchandise Imported into the United Kingdom.*

(First Eleven Months.) FOREIGN ARTICLES IMPORTED.		[000's omitted.]		1863.	1862.	1861.	1860.	1859.
		£	£	£	£	£	£	£
RAW MATLS.— <i>Textile.</i>	Cotton Wool	43,193,	23,598,	35,940,	31,567,	28,762,		
	Wool (Sheep's)..	10,741,	10,492,	8,735,	9,727,	8,791,		
	Silk	13,982,	14,243,	7,090,	7,881,	8,904,		
	Flax	3,553,	4,694,	3,019,	3,377,	3,463,		
	Hemp	2,916,	2,253,	1,637,	1,509,	2,205,		
	Indigo	2,287,	2,360,	2,698,	2,403,	1,888,		
		76,672,	57,640,	59,119,	56,464,	54,013,		
" " <i>Various.</i>	Hides	2,700,	2,560,	2,377,	2,801,	2,795,		
	Oils	3,408,	3,204,	2,987,	3,334,	2,846,		
	Metals	3,472,	3,816,	3,164,	3,442,	3,221,		
	Tallow	1,819,	1,770,	2,272,	2,815,	2,547,		
	Timber.....	9,846,	8,465,	9,228,	8,366,	7,002,		
		21,245,	19,815,	20,028,	20,758,	18,411,		
" " <i>Agrcultl.</i>	Guano	2,372,	1,049,	1,781,	1,183,	720,		
	Seeds	2,751,	2,553,	2,663,	2,697,	2,570,		
		5,123,	3,602,	4,444,	3,880,	3,290,		
TROPICAL, & C., PRODUCE.	Tea	9,108,	7,827,	5,895,	5,932,	4,510,		
	Coffee	3,586,	3,057,	2,424,	2,175,	1,788,		
	Sugar & Molasses	11,636,	11,276,	12,431,	11,722,	11,322,		
	Tobacco	2,293,	1,790,	1,625,	984,	1,068,		
	Rice	1,352,	2,069,	1,697,	778,	658,		
	Fruits	1,274,	1,027,	1,155,	954,	950,		
	Wine	3,992,	3,273,	3,563,	3,883,	2,320,		
	Spirits	1,563,	1,470,	1,567,	1,769,	1,993,		
		34,804,	31,789,	30,357,	28,197,	24,609,		
FOOD	Grain and Meal..	24,254,	35,063,	31,568,	27,320,	16,558,		
	Provisions	7,193,	6,858,	5,958,	5,036,	2,986,		
		31,447,	41,921,	37,526,	32,356,	19,544,		
Remainder of Enumerated Articles		4,078,	3,499,	3,239,	3,232,	2,966,		
TOTAL ENUMERATED IMPORTS....		173,369,	158,266,	154,713,	144,887,	122,833,		
Add for UNENUMERATED IMPORTS (say)		43,342,	39,561,	38,678,	36,222,	30,708,		
TOTAL IMPORTS		216,711,	197,827,	193,391,	181,109,	153,541,		

EXPORTS. — (United Kingdom.)—Whole Years, 1863-62-61-60-59.—*Declared Real Value, at Port of Shipment, of Articles of BRITISH and IRISH Produce and Manufactures Exported from United Kingdom.*

(Whole Year.) [000's omitted.] BRITISH PRODUCE, &c., EXPORTED.		1863.	1862.	1861.	1860.	1859.
		£	£	£	£	£
MANFRS.—Textile.	Cotton Manufactures..	39,424,	30,569,	37,544,	42,138,	38,743,
	„ Yarn.....	8,020,	6,203,	9,293,	9,875,	9,466,
	Woollen Manufactures	15,519,	13,147,	11,141,	12,164,	12,033,
	„ Yarn	5,065,	3,854,	3,546,	3,844,	3,080,
	Silk Manufactures ...	1,959,	2,015,	2,036,	2,106,	2,145,
	„ Yarn.....	270,	346,	276,	295,	207,
	Linen Manufactures....	6,510,	5,131,	3,859,	4,802,	4,607,
	„ Yarn.....	2,536,	1,852,	1,616,	1,801,	1,685,
		79,303,	63,117,	69,311,	77,025,	71,966,
	„ Sewed. Apparel	2,808,	2,556,	2,154,	2,157,	2,191,
	Haberdy. and Mllnry	4,362,	3,592,	3,423,	4,011,	4,289,
		7,170,	6,148,	5,577,	6,168,	6,480,
METALS	Hardware.....	3,827,	3,346,	3,425,	3,772,	3,826,
	Machinery	4,365,	4,097,	4,220,	3,825,	3,701,
	Iron	13,111,	11,302,	10,342,	12,158,	12,327,
	Copper and Brass.....	4,233,	2,823,	2,313,	3,002,	2,600,
	Lead and Tin	2,863,	2,729,	1,822,	2,562,	2,552,
	Coals and Culm	3,708,	3,750,	3,593,	3,322,	3,266,
		32,107,	28,047,	25,715,	28,641,	28,272,
Ceramic Manufcts.	Earthenware and Glass	2,090,	1,863,	1,660,	2,094,	1,921,
Indigenous Mnfrs.	Beer and Ale	1,777,	1,594,	1,417,	1,864,	2,116,
	Butter	472,	379,	484,	633,	717,
	Cheese	156,	127,	131,	119,	138,
	Candles	190,	226,	279,	239,	188,
	Salt	287,	321,	370,	358,	254,
	Spirits	454,	511,	484,	287,	306,
	Soda	868,	886,	604,	963,	1,024,
		4,204,	4,044,	3,769,	4,463,	4,743,
Various Manufcts.	Books, Printed.....	457,	416,	445,	495,	478,
	Furniture.....	302,	276,	264,	222,	242,
	Leather Manufactures	2,318,	2,565,	2,197,	2,129,	1,998,
	Soap.....	256,	227,	230,	250,	226,
	Plate and Watches ...	463,	505,	449,	564,	495,
	Stationery.....	345,	286,	649,	750,	840,
		4,141,	4,275,	4,234,	4,410,	4,279,
Remainder of Enumerated Articles		8,669,	8,839,	4,556,	3,966,	3,366,
Unenumerated Articles		8,805,	7,805,	10,293,	9,076,	9,413,
TOTAL EXPORTS		146,489,	124,138,	125,115,	135,843,	130,440,

SHIPPING.—FOREIGN TRADE.—(United Kingdom.)—Years, 1863-62-61-60.—
*Vessels Entered and Cleared with Cargoes, including repeated Voyages, but
excluding Government Transports.*

(Whole Year.) ENTERED:—	1863.			1862.		1861.		1860.	
	Vessels.	Tonnage (000's omitted.)	Average Tonnage	Vessels.	Tonnage (000's omitted.)	Vessels.	Tonnage (000's omitted.)	Vessels.	Tonnage (000's omitted.)
<i>Vessels belonging to—</i>	No.	Tons.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Russia	423	137,	324	436	135,	407	125,	435	126,
Sweden	1,043	172,	165	963	162,	945	156,	1,119	182,
Norway	3,360	755,	225	3,121	657,	2,917	634,	2,862	638,
Denmark	2,871	278,	97	2,634	257,	2,321	226,	2,957	292,
Prussia and Ger. Sts.	3,881	942,	242	3,857	929,	3,457	809,	4,067	836,
Holland and Belgium	1,702	242,	142	1,778	247,	1,546	215,	1,758	239,
France	2,884	238,	83	2,336	197,	1,686	136,	2,187	186,
Spain and Portugal	364	112,	308	375	115,	436	106,	391	101,
Italy & other Eupn. Sts.	919	266,	289	928	267,	863	239,	1,057	299,
United States	681	692,	1,016	1,327	1,179,	1,932	1,647,	1,417	1,361,
All other States	12	4,	333	15	5,	19	7,	20	6,
United Kingdm. & } Depds.	18,140	3,838,	212	17,770	4,150,	16,529	4,300,	18,270	4,293,
	23,773	7,299,	307	22,356	6,590,	21,060	6,394,	20,104	5,762,
<i>Totals Entered</i>	41,913	11,137,	266	40,126	10,740,	37,589	10,604,	38,374	10,055,
CLEARED:—									
Russia	420	131,	311	417	127,	413	123,	396	117,
Sweden	1,039	167,	161	981	163,	1,041	168,	1,163	185,
Norway	1,860	333,	179	1,974	333,	1,903	312,	1,746	311,
Denmark	3,272	321,	98	3,153	309,	3,285	323,	3,362	328,
Prussia and Ger. Sts.	5,548	1,132,	204	5,480	1,072,	5,207	990,	5,033	936,
Holland and Belgium	1,888	292,	154	2,195	331,	1,932	278,	2,018	319,
France	4,602	450,	98	5,070	492,	5,135	496,	4,068	431,
Spain and Portugal	390	124,	317	380	121,	398	107,	364	92,
Italy & other Eupn. Sts.	1,106	330,	298	1,039	297,	1,098	304,	1,152	332,
United States	627	648,	1,033	1,172	1,052,	1,580	1,369,	1,456	1,368,
All other States	21	6,	286	32	12,	23	7,	19	6,
United Kingdm. & } Depds.	20,773	3,934,	189	21,893	4,309,	22,015	4,477,	20,777	4,425,
	27,624	7,952,	288	27,066	7,400,	26,454	6,841,	23,713	6,359,
<i>Totals Cleared</i>	48,397	11,886,	246	48,959	11,709,	48,469	11,318,	44,490	10,784,

GOLD AND SILVER BULLION AND SPECIE. — IMPORTED AND EXPORTED. — (United Kingdom.) — *Computed Real Value for the Whole Years, 1863-62-61.*

[000's omitted.]

(Whole Year.)	1863.		1862.		1861.	
	Gold.	Silver.	Gold.	Silver.	Gold.	Silver.
Imported from:—	£	£	£	£	£	£
Australia	5,995,	—	6,075,	—	6,331,	1,
So. Amca. and W. } Indies	3,897,	6,651,	1,631,	6,242,	1,600,	5,115,
United States and } Cal.	7,321,	627,	9,732,	333,	39,	28,
	17,413,	7,278,	18,068,	6,575,	7,970,	5,144,
France	187,	1,257,	92,	2,203,	2,505,	690,
Hanse Towns, Holl. } & Belg.	316,	2,062,	430,	2,707,	886,	524,
Prtgl., Spain, and } Gbrltr.	16,	90,	25,	120,	27,	155,
Mlta., Trky., and } Egypt	115,	4,	8,	13,	53,	29,
China	—	—	—	—	5,	1,
West Coast of Africa	70,	8,	100,	6,	78,	2,
All other Countries....	1,025,	189,	1,179,	128,	640,	38,
<i>Totals Imported</i>	19,142,	10,888,	9,902,	11,752,	12,164,	6,583,
Exported to:—						
France	3,503,	1,258,	6,356,	849,	998,	1,053,
Hanse Towns, Holl. } & Belg.	1,104,	791,	348,	655,	21,	854,
Prtgl., Spain, and } Gbrltr.	1,745,	5,	2,466,	8,	985,	3,
	6,352,	2,054,	9,170,	1,512,	2,004,	1,910,
Ind. and China (viâ } Egypt)	3,474,	8,815,	1,920,	10,710,	794,	7,280,
Danish West Indies....	—	—	—	—	53,	39,
United States	40,	14,	37,	1,	7,298,	84,
South Africa	159,	7,	—	—	133,	10,
Mauritius	—	—	—	—	—	2,
Brazil	1,681,	50,	409,	44,	20,	150,
All other Countries....	3,597,	300,	4,476,	1,047,	934,	98,
<i>Totals Exported</i>	15,303,	11,240,	16,012,	13,314,	11,238,	9,573,
Excess of Imports	3,839,	—	3,890,	—	926,	—
„ Exports	—	648,	—	1,562,	—	2,990,

SHIPPING CASUALTIES *Reported in Lloyd's "REGISTER OF LOSSES," during*
(Casualties to Foreign Coasters, or to

Note.—This information, in a different form, was originally published, at intervals, in "Lloyd's

	Wrecked.				Sunk.			Abandoned.			Missing.
	Totally.	Part of Cargo Saved.	Whole, or nearly so, of Cargo Saved.	Total.	Lost.	Raised.	Total.	Lost.	Reco- vered.	Total.	
October—											
1854	76	19	12	107	30	1	31	25	8	33	1
'55	58	14	7	79	28	5	33	12	10	22	2
'56	50	13	1	64	29	4	33	20	4	24	2
'57	80	13	8	101	49	5	54	17	5	22	—
'58	64	10	9	83	35	3	38	7	3	15	3
'59	149	24	7	180	62	9	71	19	3	22	1
Aver. of Six Yrs.	79·5	15·5	7·33	102·33	38·83	4·5	43·33	16·67	6·33	23·0	1·5
November—											
1854	70	15	6	91	26	3	29	24	7	31	1
'55	56	7	7	70	36	5	41	13	6	19	—
'56	63	12	9	84	36	1	37	10	11	21	1
'57	61	12	6	79	29	2	31	11	5	16	1
'58	106	21	6	133	47	6	53	36	7	43	1
'59	141	21	6	168	63	3	66	46	12	58	1
Aver. of Six Yrs.	82·83	14·67	6·67	104·17	39·5	3·33	42·83	23·33	8·0	31·33	·83
December—											
1854	102	12	10	124	28	2	30	21	7	28	6
'55	73	13	12	98	32	2	34	19	7	26	1
'56	88	16	7	111	48	7	55	19	8	27	8
'57	52	17	2	71	22	—	22	20	3	23	5
'58	53	15	7	75	34	7	41	48	8	56	1
'59	100	18	1	119	41	5	46	15	6	21	4
Aver. of Six Yrs.	78·0	15·17	6·5	99·67	34·17	3·83	38·0	23·67	6·5	30·17	4·17
Dec. Qr.—											
1854	248	46	28	322	84	6	90	70	22	92	8
'55	187	34	26	247	96	12	108	44	23	67	3
'56	201	41	17	259	113	12	125	49	23	72	11
'57	193	42	16	251	100	7	107	48	13	61	6
'58	223	46	22	291	116	16	132	91	23	114	5
'59	390	63	14	467	166	17	183	80	21	101	6
Aver. of Six Yrs.	240·33	45·33	20·5	306·17	112·5	11·67	124·17	63·67	20·83	84·5	6·5
Annual No.—											
1854	701	76	37	814	250	25	275	234	71	305	47
'55	574	113	59	746	266	32	298	138	62	200	29
'56	604	112	44	760	292	34	326	172	57	229	43
'57	589	147	53	789	334	30	364	162	50	212	40
'58	610	116	42	768	330	49	379	186	52	238	34
'59	771	157	38	966	403	49	452	184	55	239	36
Aver. of Six Yrs.	641·5	120·17	45·5	807·17	312·5	36·5	349·0	179·33	57·83	237·17	38·17

* The majority of these ma

the Months of OCTOBER, NOVEMBER, and DECEMBER, from 1854 to 1859 inclusive.
Vessels Unidentified, are not included.)

list," but is now collated and tabulated by HENRY JEULA, Esq., Member of Lloyd's, F.S.S.

Stranded.				Condemned.			Touched the Ground, sustaining Trifling Damage.	Total.	
Subse- quent Fate not Reported.*	Got Off.	Got Off with Loss of part Cargo.	Total.	After Striking, &c.	From other Causes.	Total.			
57	126	10	193	1	2	3	—	368	October—
57	92	2	151	4	4	8	—	295	1854
46	116	5	167	1	4	5	1	296	'55
40	98	3	141	1	4	5	—	323	'56
58	119	11	188	5	3	8	—	335	'57
117	139	12	268	6	8	14	—	556	'58
62·5	115·0	7·17	184·67	3·0	4·17	7·17	·17	362·17	'59
									Aver. of Six Yrs.
50	99	6	155	1	4	5	—	312	November
72	160	6	238	1	4	5	4	377	1854
66	93	9	168	3	2	5	1	317	'55
46	108	4	158	2	5	7	—	292	'56
67	132	7	206	4	2	6	2	444	'57
76	154	10	240	6	6	12	—	545	'58
62·83	124·33	7·0	194·17	2·83	3·83	6·67	1·17	381·17	'59
									Aver. of Six Yrs.
93	141	4	238	4	4	8	2	436	December
90	156	2	248	6	3	9	—	416	1854
70	182	11	263	5	3	8	2	474	'55
48	101	5	154	3	4	7	—	282	'56
53	135	14	202	1	7	8	—	383	'57
62	129	10	201	4	7	11	—	402	'58
69·33	140·67	7·67	217·67	3·83	4·67	8·5	·67	398·83	'59
									Aver. of Six Yrs.
200	366	20	586	6	10	16	2	1,116	Dec. Qr.—
219	408	10	637	11	11	22	4	1,088	1854
182	391	25	598	9	9	18	4	1,087	'55
134	307	12	453	6	13	19	—	897	'56
178	386	32	596	10	12	22	2	1,162	'57
255	422	32	709	16	21	37	—	1,503	'58
194·67	380·0	21·83	596·5	9·67	12·67	22·33	2·0	1142·17	'59
									Aver. of Six Yrs.
618	1,110	54	1,782	33	36	69	22	3,314	Annual No.
505	1,176	59	1,740	27	34	61	11	3,085	1854
571	1,155	72	1,798	32	40	72	13	3,241	'55
555	1,265	69	1,889	28	48	76	7	3,377	'56
503	1,228	84	1,815	31	59	90	5	3,329	'57
546	1,263	86	1,895	42	72	114	—	3,702	'58
549·67	1199·5	70·67	1819·83	32·17	48·17	80·33	9·67	3341·33	'59
									Aver. of Six Yrs.

be considered as "Wrecks."

SUMMARY OF SHIPPING CASUALTIES *Reported in Lloyd's*
(Casualties to Foreign Coasters, or to

Note.—This information, in a different form, was originally published, at intervals, in “Lloyd's

	Wrecked.				Sunk.			Abandoned.			Missing
	Totally.	Part of Cargo Saved.	Whole, or nearly so, of Cargo Saved.	Total.	Lost.	Raised.	Total.	Lost.	Reco- vered.	Total.	
Monthly Average—											
January	92·0	11·67	3·67	107·33	31·0	3·67	34·67	22·83	5·0	27·83	5·83
February	58·17	8·0	2·83	69·0	23·0	2·33	25·33	18·5	6·0	24·5	4·0
March	56·67	9·17	2·17	68·0	23·5	2·67	26·17	17·33	5·67	23·0	5·17
April	40·17	9·67	2·33	52·17	21·17	3·67	24·83	14·0	5·5	19·5	3·67
May	28·0	8·33	1·83	38·17	21·17	2·83	24·0	12·67	2·5	15·17	3·0
June	30·0	6·33	2·17	38·5	16·33	2·5	18·83	7·83	2·67	10·5	4·67
July	29·0	6·17	3·5	38·67	15·5	1·83	17·33	5·50	3·0	8·5	2·17
August	31·0	8·83	2·67	42·5	23·67	2·5	26·17	8·67	4·17	12·83	1·83
September	36·17	6·67	3·83	46·67	24·67	2·83	27·5	8·33	2·5	10·83	1·33
October	79·5	15·5	7·33	102·33	38·83	4·5	43·33	16·67	6·33	23·0	1·5
November	82·83	14·67	6·67	104·17	39·5	3·33	42·83	23·33	8·0	31·33	·83
December ...	78·0	15·17	6·5	99·67	34·17	3·83	38·0	23·67	6·5	30·17	4·17
Quarterly Average—											
March quarter	206·83	28·83	8·67	244·33	77·5	8·67	86·17	58·67	16·67	75·33	15·0
June „	98·17	24·33	6·33	128·83	58·67	9·0	67·67	34·5	10·67	45·17	11·33
September } quarter....	96·17	21·67	10·0	127·83	63·83	7·17	71·0	22·5	9·67	32·17	5·33
December } quarter....	240·33	45·33	20·5	306·17	112·5	11·67	124·17	63·67	20·83	84·5	6·5
Half-Yearly Average—											
First half- year	305·0	53·17	15·0	373·17	136·17	17·67	153·83	93·17	27·33	120·5	26·33
Second half- year	336·5	67·0	30·5	434·0	176·33	18·83	195·17	86·17	30·5	116·67	11·83
Annual Average }	641·5	120·17	45·5	807·17	312·5	36·5	349·0	179·33	57·83	237·17	38·17

* The majority of these m

"REGISTER OF LOSSES" during the Years 1854 to 1859 inclusive.
Vessels Unidentified, are not included.)

List," but is now collated and tabulated by HENRY JEULA, Esq., Member of Lloyd's, F.S.S.

Stranded.				Condemned.			Touched the Ground, sustaining Trifling Damage.	Total.	
Subse- quent Fate not Reported.*	Got Off.	Got Off with Loss of part Cargo.	Total.	After Striking, &c.	From other Causes.	Total.			
80'33	139'33	6'5	226'17	3'83	4'5	8'33	2'17	412'33	Monthly Average—
50'0	103'5	4'17	157'67	2'67	5'33	8'0	1'83	290'33	January
50'33	114'17	5'0	169'5	3'33	5'0	8'33	1'0	301'17	February
37'33	96'33	6'83	140'5	2'67	2'83	5'5	1'17	246'33	March
31'83	73'83	6'33	112'0	2'0	3'83	5'83	5	198'67	April
22'83	70'17	5'0	98'0	1'33	3'5	4'83	5	175'83	May
26'5	65'33	4'5	96'33	3'0	3'83	6'83	67	170'5	June
22'83	64'5	5'5	92'83	1'67	3'83	5'5	33	182'0	July
33'0	92'33	5'0	130'33	2'0	2'83	4'83	5	222'0	August
62'5	115'0	7'17	184'67	3'0	4'17	7'17	17	362'17	September
62'83	124'33	7'0	194'17	2'83	3'83	6'67	1'17	381'17	October
69'33	140'67	7'67	217'67	3'83	4'67	8'5	67	398'83	November
									December
180'67	357'0	15'67	553'33	9'83	14'83	24'67	5'0	1003'83	Quarterly Average—
92'0	240'33	18'17	350'5	6'0	10'17	16'17	1'17	620'83	March quarter
82'33	222'17	15'0	319'5	6'67	10'5	17'17	1'5	574'5	June ,,
194'67	380'0	21'83	596'5	9'67	12'67	22'33	2'0	1142'17	{ September quarter
									{ December quarter
272'67	597'33	33'83	903'83	15'83	25'0	40'83	6'17	1624'67	Half-Yearly Average—
277'0	602'17	36'83	916'0	16'33	23'17	39'5	3'5	1716'67	{ First half- year
									{ Second half- year
549'67	1199'5	70'67	1819'83	32'17	48'17	80'33	9'67	3341'33	{ Annual Average

considered as "Wrecks."

REVENUE.—(UNITED KINGDOM.)—31ST DEC., 1863-62-61-60.

Net Produce in YEARS and QUARTERS ended 31ST DEC., 1863-62-61-60.

[000's omitted.]

QUARTERS, ended 31st Dec.	1863.	1862.	1863.		Corresponding Quarters.	
			Less.	More.	1861.	1860.
	£ Mlms.	£ Mlms.	£ Mlms.	£ Mlms.	£ Mlms.	£ Mlms.
Customs	5,970,	6,320,	350,	—	6,147,	5,861,
Excise	4,753,	4,000,	—	753,	3,896,	4,359,
Stamps	2,293,	2,187,	—	106,	2,098,	2,036,
Taxes	1,285,	1,270,	—	15,	1,282,	1,293,
Post Office	990,	950,	—	40,	910,	880,
	15,291,	14,727,	350,	914,	14,333,	14,429,
Property Tax	2,132,	2,931,	799,	—	2,359,	3,530,
	17,423,	17,658,	1,149,	914,	16,692,	17,959,
Crown Lands	87,	86,	—	1,	84,	83,
Miscellaneous	808,	634,	—	173,	292,	228,
<i>Totals</i>	18,318,	18,378,	1,149,	1,088,	17,068,	18,270,
			NET DECR. £60,762			

YEARS, ended 31st Dec.	1863.	1862.	1863.		Corresponding Years.	
			Less.	More.	1861.	1860.
	£ Mlms.	£ Mlms.	£ Mlms.	£ Mlms.	£ Mlms.	£ Mlms.
Customs	23,421,	24,036,	615,	—	23,774,	23,032,
Excise	17,745,	17,534,	—	211,	18,161,	19,069,
Stamps.....	9,252,	8,914,	—	338,	8,488,	8,285,
Taxes	3,208,	3,148,	—	60,	3,119,	3,126,
Post Office	3,800,	3,600,	—	200,	3,500,	3,420,
	57,426,	57,232,	615,	809,	57,042,	56,932,
Property Tax	9,806,	11,104,	1,298,	—	9,962,	12,902,
	67,232,	68,336,	1,913,	809,	67,004,	69,834,
Crown Lands	302,	298,	—	4,	294,	290,
Miscellaneous	2,899,	2,362,	—	537,	1,306,	1,843,
<i>Totals</i>	70,433,	70,996,	1,913,	1,350,	68,604,	71,967,
			NET DECR. £562,809			

REVENUE.—UNITED KINGDOM.—QUARTER ENDED 31ST DEC., 1863 :—
APPLICATION.

An Account showing the REVENUE and other RECEIPTS of the QUARTER ended 31st December, 1863 ; the APPLICATION of the same, and the Charge of the Consolidated Fund for the said Quarter, together with the Surplus or Deficiency upon such Charge.

Received:—

Surplus Balance beyond the Charge of the <i>Consolidated Fund</i> for the Quarter ended 30th September, 1863, viz.:—	£
Great Britain	—
Ireland	£457,580
	457,580
Income received in the Quarter ended 31st December, 1863, as shown in preceding page	18,318,166
Amount received in the Quarter ended 31st December, 1863, in repayment of Advances for Public Works, &c.	428,052
	£19,203,798
Balance, being the Deficiency on 31st December, 1863, upon the charge of the Consolidated Fund in Great Britain, to meet the Dividends and other charges payable in the Quarter to 31st March 1864, and for which the Exchequer Bills (Deficiency) will be issued in that Quarter	899,054
	£20,102,852

Paid:—

Amount applied out of the Income for the Quarter ended 31st December, 1863, in Redemption of the Exchequer Bills (Deficiency), for the Quarter ended 30th September, 1863, viz.:—	£
Total deficiency	£2,273,640
Deduct—Redeemed by Sinking Fund	289,000
	1,981,640
Amount applied out of the Income to <i>Supply Services</i> in the Quarter ended 31st December, 1863	8,777,292
Charge of the <i>Consolidated Fund</i> for the Quarter ended 31st December, 1863, viz.:—	
Interest of the Permanent Debt	£6,290,694
Terminable Debt	333,448
Principal of Exchequer Bills	71,700
Interest of " "	69,710
" Deficiency "	—
The Civil List	101,270
Other Charges on Consolidated Fund	588,615
Advances for Public Works, &c.	396,972
Sinking Fund	510,292
	8,362,701
<i>Surplus Balance</i> in Ireland beyond the Charge of the Consolidated Fund in Ireland for the Quarter ended 31st December, 1863	978,219
	£20,102,852

CORN.—*Gazette Average Prices (ENGLAND AND WALES), Fourth Quarter of 1863.*

[This Table is communicated by H. F. JADIS, Esq., Comptroller of Corn Returns.]

Weeks ended on a Saturday 1863.		Weekly Average. (Per Impl. Quarter.)					
		Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
		s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
October	3	42 2	35 4	19 8	31 —	37 11	36 7
"	10	41 —	34 7	19 4	31 5	37 —	36 4
"	17	40 4	34 —	18 8	29 2	36 5	34 7
"	24	40 —	33 11	18 7	28 9	36 5	35 8
"	31	49 10	34 —	18 11	28 —	35 8	35 2
Average for October ..		40 8	34 4	19 —	29 8	36 8	35 8
November	7	40 —	34 2	18 7	28 4	35 10	35 —
"	14	39 10	34 —	18 9	25 —	36 5	34 1
"	21	39 11	33 11	19 11	29 7	35 6	34 2
"	28	40 3	33 7	19 7	34 9	36 1	34 1
Average for November..		40 —	33 11	19 2	29 5	35 11	34 4
December	5	40 9	33 6	19 5	29 7	35 3	33 7
"	12	41 1	32 10	19 3	29 11	34 11	34 2
"	19	41 2	32 6	19 —	29 4	34 9	33 7
"	26	40 5	32 —	19 —	33 6	34 4	33 8
Average for December ..		40 10	32 8	19 2	30 7	34 9	33 9
Average for the Quarter ..		40 6	33 8	19 1	29 10	35 10	34 8
Average for the Year		41 9	33 11	21 2	32 5	37 5	36 —

RAILWAYS.—PRICES, Oct.—Dec.;—and TRAFFIC, Jan.—Dec., 1863.

Total Capital Ex- pended Mins.	Railway.	For the (£100). Price on			Miles Open.		Total Traffic first 52 Weeks. (unit 000's omitted.)		Traffic pr. Mile pr. Wk. 52 Weeks.		Dividends per Cent for Half Years.		
		1st Dec.	2nd Nov.	1st Oct.	'63.	'62.	'63.	'62.	'63.	'62.	30 Jun. '63.	31 Dec. '62.	30 Jun. '63.
£					No.	No.	£	£	£	£	s. d.	s. d.	s.
48,0	Lond. & N. Westn.	104½	104¾	103	1,209	1,179	4,905,	4,679,	77	68	42 6	55 —	3
44,0	Great Western	63¾	66½	66½	1,056	1,032	3,026,	2,955,	55	52	20 —	30 —	—
15,0	" Northern ..	128	130	127	353	351	1,523,	1,467,	84	75	42 6	85 —	4
20,6	" Eastern	50	51	52	663	644	1,539,	1,476,	48	45	12 6	25 —	2
11,2	Brighton	112	113	113½	261	241	976,	1,000,	68	71	50 —	70 —	5
14,9	South-Eastern	96	96½	97½	306	306	1,135,	1,130,	69	69	45 —	60 —	4
14,7	" Western	102½	102½	102½	450	441	1,143,	1,109,	51	47	45 —	60 —	4
68,4		93¾	94¾	94½	4,298	4,194	14,247,	13,816,	64	61	36 9	55 —	3
22,7	Midland	127¾	129½	128¾	641	614	2,177,	2,064,	68	55	57 6	65 —	5
19,8	Lancsh. and York.	108¾	112	113¾	402	395	1,813,	1,700,	88	80	42 6	40 —	3
12,5	Sheffield and Man.	48½	51	47	239	239	806,	739,	66	58	—	—	—
30,8	North-Eastern	102	103¾	102	1,095	1,079	2,524,	2,373,	47	45	42 6	50 —	4
85,8		96¾	99	97¾	2,377	2,327	7,320,	6,876,	67	59	47 6	51 8	4
9,7	Caledonian	119½	120½	120	234	234	880,	822,	73	66	52 6	60 —	—
5,5	Gt. S. & Wn. Irln.	101	102	102	273	329	413,	408,	22	25	42 6	50 —	—
269,4	Gen. aver.	97½	98½	98	7,282	7,084	22,860,	21,922,	62	58	38 —	50 —	—

Consols.—Money Prices 1st Dec., 92½ to 92¾ de, and 91½ to 91¾ x. d.—2nd Nov., 92½ to 92¾ de, and 92¾ to 92½ for acc.

Exchequer Bills.—1st Dec., 10s. to 5s. d.—2nd Nov., 1s. to 2s. pm.—1st Oct., par to 3s. pr

BANK OF ENGLAND.—WEEKLY RETURN.

Pursuant to the Act 7th and 8th Victoria, c. 32 (1844), for Wednesday in each Week, during the FOURTH QUARTER (Oct.—Dec.) of 1863.

[0,000's omitted.]

ISSUE DEPARTMENT.					COLLATERAL COLUMNS.	
1	2	3	4	5	6	7
Liabilities.	DATES.	Assets.			Notes in Hands of Public. (Col. 1 minus col. 16.)	Minimum Rates of Discount at Bank of England.
Notes Issued.	(Wednesdays.)	Government Debt.	Other Securities.	Gold Coin and Bullion.		
£ Mlns.	1863.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	1863. Per ann. 21 May 4 p. ct.
28,82	Oct. 7 ...	11,02	3,63	14,17	21,77	
28,54	„ 14 ...	11,02	3,63	13,89	22,14	
28,58	„ 21 ...	11,02	3,63	13,93	22,08	
28,42	„ 28 ...	11,02	3,63	13,77	21,87	
27,85	Nov. 4 ...	11,02	3,63	13,19	22,05	5 Nov. 6 „
27,43	„ 11 ...	11,02	3,63	12,78	21,42	
27,37	„ 18 ...	11,02	3,63	12,73	21,09	
27,33	„ 25 ...	11,01	3,63	12,68	20,51	
27,08	Dec. 2 ...	11,01	3,63	12,43	21,02	3 Dec. 8 „
26,93	„ 9 ...	11,01	3,63	12,28	20,20	
27,57	„ 16 ...	11,01	3,63	12,92	19,81	
28,15	„ 23 ...	11,01	3,63	13,50	19,66	26 Dec. 7 „
28,33	„ 30 ...	11,02	3,63	13,68	20,12	

BANKING DEPARTMENT.

8	9	10	11	12	13	14	15	16	17	18
Liabilities.					DATES. (Wdnsdys.)	Assets.				Totals of Liabi- ties and Assets.
Capital and Rest.		Deposits.		Seven Day and other Bills.		Securities.		Reserve.		
Capital.	Rest.	Public.	Private.			Government.	Other.	Notes.	Gold and Silver Coin.	
£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	1863.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.
14,55	3,74	9,51	12,89	,78	Oct. 7	11,14	22,59	7,05	,69	41,47
14,55	3,12	4,62	16,35	,72	„ 14	10,95	21,34	6,40	,68	39,37
14,55	3,14	4,44	15,27	,75	„ 21	10,95	19,99	6,50	,72	38,15
14,55	3,15	4 46	15,02	,73	„ 28	10,99	19,69	6,55	,67	37,90
14,55	3,14	5,07	13,86	,74	Nov. 4	10,95	20,01	5,80	,60	37,37
14,55	3,18	5,62	13,66	,69	„ 11	10,95	20,07	6,01	,68	37,71
14,55	3,19	6,45	13,40	,68	„ 18	10,81	20,50	6,28	,69	38,28
14,55	3,20	7,04	12,80	,65	„ 25	10,71	20,02	6,82	,69	38,25
14,55	3,18	7,23	12,92	,66	Dec. 2	10,71	21,17	6,06	,61	38,56
14,55	3,22	8,63	12,98	,61	„ 9	10,71	21,81	6,73	,73	39,99
14,55	3,23	9,10	13,26	,58	„ 16	10,76	21,44	7,76	,76	40,73
14,55	3,23	10,27	12,71	,61	„ 23	10,76	21,41	8,49	,71	41,38
14,55	3,25	10,84	13,02	,56	„ 30	10,96	22,38	8,21	,68	42,23

CIRCULATION.—COUNTRY BANKS.

Average Amount of Promissory Notes in Circulation in ENGLAND and WALES, on Saturday, in each Week during the FOURTH QUARTER (Oct.—Dec.) of 1863; and in SCOTLAND and IRELAND, at the Three Dates, as under.

ENGLAND AND WALES.				SCOTLAND.				IRELAND.		
DATES.	Private Banks. (Fixed Issues, 4·26.)	Joint Stock Banks. (Fixed Issues, 3·27.)	TOTAL. (Fixed Issues, 7·54.)	Three Weeks, ended	£5 and upwards.	Under £5.	TOTAL. (Fixed Issues, 2·75.)	£5 and upwards.	Under £5.	TOTAL. (Fixed Issues, 6·35.)
1863.	£ Mlns.	£ Mlns.	£ Mlns.	1863.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.
Sept. 26	3,17	2,93	6,10							
Oct. 3	3,31	3,04	6,35							
„ 10	3,40	3,05	6,46							
„ 17	3,44	3,03	6,47	Oct. 17	1,63	2,70	4,34	2,88	2,78	5,66
„ 24	3,41	3,01	6,43							
„ 31	3,38	3,00	6,38							
Nov. 7	3,36	3,00	6,36							
„ 14	3,33	2,98	6,31	Nov. 14	1,74	2,79	4,53	2,99	3,02	6,02
„ 21	3,29	2,95	6,25							
„ 28	3,26	2,93	6,19							
Dec. 5	3,19	2,87	6,06							
„ 12	3,13	2,84	5,98	Dec. 12	1,70	2,94	4,64	2,86	3,08	5,94

FOREIGN EXCHANGES.—*Quotations as under, LONDON on Paris, Hamburg & Calcutta; —and New York, Calcutta, Hong Kong & Sydney, on LONDON—with collateral cols.*

1	2	3	4	5	6	7	8	9	10	11	12	13	14
DATES.	Paris.				Hamburg.			New York.	Calcutta.		Hong Kong.	Sydney.	Standard Silver in bars in London. pr. oz.
	London on Paris. 3 m. d.	Bullion as arbitrated.		Prem. or Dis. on Gold per mille. 3 m. d.	London on Hambg. 3 m. d.	Bullion as arbitrated.			India Council 60 d. s.	At Calcutta on London. 6 m. s.			
		Agnst. Engd.	For Engd.			Agnst. Engd.	For Engd.						
1863.		pr. ct.	pr. ct.		pr. ct.	pr. ct.	pr. ct.	d.	d.	d.	pr. ct.	d.	
Oct. 3 ..	25·57½	—	0·3	½ pm	13·8¾	—	0·6	151	23¾	24¾	57¾	1 p.	61¼
„ 17 ..	25·60	—	0·3	½ „	8¾	—	0·6	157	23¼	„	58	2 „	61¾
Nov. 7 ..	25·62½	—	0·1	1½ „	·9	0·4	—	163½	23⅞	24½	„	„	61⅝
„ 14 ..	25·75	—	0·1	2 „	13·9½	0·5	—	161	24	24⅝	„	„	„
Dec. 5 ..	25·80	—	0·1	2½ „	13·9¼	0·1	—	162½	23⅝	25½	57½	„	61⅜
„ 19 ..	25·75	—	0·2	3 „	13·8½	—	—	161½	„	25½	„	„	61¼

JOURNAL OF THE STATISTICAL SOCIETY,

JUNE, 1864.

REPORT of the COUNCIL for the FINANCIAL YEAR ended 31st December, 1863, and for the SESSIONAL YEAR ended March, 1864, presented at the THIRTIETH ANNIVERSARY MEETING of the STATISTICAL SOCIETY, held at the Society's Rooms, 12, St. James's Square, on Tuesday, 15th March, 1864; with the PROCEEDINGS of that Meeting.

COLONEL W. H. SYKES, M.P., F.R.S., *President, in the Chair.*

THE Council have much pleasure in placing before the Fellows of the Statistical Society upon this the *thirtieth* anniversary a brief report of the proceedings of the past year.

The number of Fellows now on the list (March, 1864) is 357, including 63 Life Members — against 368 (including 67 Life Members) at the same date last year. The losses by death, withdrawal, and default have been 27; the new elections are 16. In 1862-63 the losses were 35; and the new elections, 26.

The Income of the Year ended 31st December, 1863 (exclusive of the balance of 233*l.* from 1862), was 766*l.* (against 770*l.* in 1862); and the expenditure was 669*l.* (against 763 in 1862), leaving a Cash Balance, on 31st December, 1863, of 330*l.* (against 233*l.* at the end of 1862).

The Surplus of Assets, on the 31st December, 1863, was 1,767*l.*, after providing for all Liabilities; on 31st December, 1862, it was 1,720*l.* These figures afford the best evidence of the satisfactory condition of the Society's finances.

No diminution has been experienced in the number, variety, or importance of the subjects which, during the past year, have been brought under the notice of the Society. The following Papers were read at the Monthly Meetings:—

March, 1863.—*Mr. Walford.*—Recent Financial and Taxation Statistics of the United States.

April, ,, *Mr. Frederick Purdy.*—The Expenditure of the United Kingdom for Colonial Purposes.

- May, 1863.—*Major-General Tulloch, K.C.B.*—On the Pay and Income of the British Soldier, as compared with the Rate of Agricultural Wages.
- June, „ *Dr. Guy.*—On Sufficient and Insufficient Dietaries, with especial Reference to the Dietaries of Prisoners.
- Nov., „ *Mr. H. J. Chapman.*—The Industrial Progress of Victoria as connected with its Gold Mining.
- „ „ *Mr. Hendriks.*—On the Progress of Official Statistics in the Netherlands, with a New Dutch Life Table, by Dr. von Baumhauer.
- Dec. „ *Professor Rogers (Oxford).*—On the Continuous Price of Wheat for 102 Years (1380-1481).
- „ „ *Colonel Sykes.*—On Edibles and Potables in 1506.
- Jan., 1864. — *Professor Hind.*—On the Commercial Progress and Resources of Central British North America.
- Feb., „ *Mr. W. L. Sargant.*—On certain Defects and Results of the Registrar-General's Reports.

The Thirty-third Meeting of the British Association was held at Newcastle-upon-Tyne, in August last. Mr. Tite, M.P., one of the Fellows of this Society, was President of that Section which is devoted to the study and discussion of questions of Economic Science and Statistics. Several papers were contributed to the Section by our own Fellows, and one in particular by the President of this Society, of a very elaborate and practical character, upon the comparative cost of the English and French armies. This paper, upon a subject of special interest at the present time, will be found in the March number of the *Journal*.

The National Association for the Promotion of Social Science met in Edinburgh, under the Presidency of Lord Brougham, in the early part of October last. The Fellows have been already informed by Mr. Walford, who attended the Meeting as one of the Delegates of the Statistical Society, of the success which as usual attended the researches of that cosmopolitan body. Mr. Walford was struck by the large application of statistical methods to the investigation of topics brought under the notice of the various Sections assembled at Edinburgh.

The International Statistical Congress met at Berlin in September last. Mr. Samuel Brown, who was a Delegate from this Society, has already told us of the proceedings of that Meeting. The Delegates sent to the Congress by Her Majesty's Government were Dr. Farr, Mr. Hammick, and Mr. Valpy. The Report presented by each of those gentlemen to the Congress is published in our *Journal*.

The Council are happy to say that, during the past year, the useful task of preparing a General Index to those volumes of the *Journal*, ten in number, which have been published since 1852, has been successfully accomplished, at a cost which has been entirely limited to the charge for printing; and, consequently, it can be supplied to the Members at an extremely moderate price. At the same time the Council have deemed it advisable to reduce the price of the Index to the first fifteen volumes to half the original charge.

In conclusion, the Council beg to assure the Fellows that it will be their endeavour to maintain the usefulness of the Society by extending its numbers and influence.

The Chairman moved the adoption of the Report, together with the Abstract of Receipts and Payments and the Auditors' Report.

The Resolution having been seconded was carried unanimously.

A Ballot was then taken for the election of a President, Council, and Officers for the ensuing twelvemonths, and the following was declared to be the list, viz.:—

COUNCIL AND OFFICERS FOR 1864-65.

President.

COLONEL W. H. SYKES, M.P., F.R.S.

Council.

Charles Babbage, M.A., F.R.S.
Colonel George Balfour
 James Bird, M.D.
 Sir John Boileau, Bart., F.R.S.
 Samuel Brown
 William Camps, M.D.
James Caird, M.P.
Edwin Chadwick, C.B.
Leonard Henry Courtney
 William Farr, M.D., D.C.L., F.R.S.
 Right Hon. Earl Fortescue
 William Augustus Guy, M.B.
 James Thomas Hammick
 Frederick Hendriks
 James Heywood, F.R.S.
 William Barwick Hodge
 Charles Jellicoe

Leone Levi, F.S.A.
 William Golden Lumley, LL.M.
 The Right Hon. Holt Mackenzie,
 F.R.G.S.
 Matthew Henry Marsh, M.P.
 Right Hon. Lord Monteagle, F.R.S.
Sir Roderick Impey Murchison,
K.C.B., G.C.St.S., D.C.L., LL.D
 William Newmarch, F.R.S.
 Frederick Purdy
 Colonel W. H. Sykes, M.P., F.R.S.
W. Tite, M.P.
 Major-General Sir A. M. Tullock
 K.C.B.
 Richard Valpy
 Cornelius Walford
 Rev. William Whewell, D.D., F.R.S.

The names of the New Members of the Council are given in Italics.

Treasurer.

William Farr, M.D., D.C.L., F.R.S.

Honorary Secretaries.

William Augustus Guy, M.B.	|	William Golden Lumley, LL.M.
Frederick Purdy.		

Mr. Taylor moved a vote of thanks to the President, Council, and Officers, for their services during the past year, which was carried unanimously.

At the motion of Mr. James Heywood, and seconded by Dr. Farr, it was unanimously resolved:—

“ That the Fellows desire to call the attention of the Council to the recent amalgamation of the Social Science Association with the Society for the Amendment of the Law, by which opportunities will probably be afforded of occasional large assemblies in London on subjects connected with Social Science, Economic Science, and Statistics.”

A vote of thanks to the Chair brought the proceedings to a close.

The following is the Report of the Auditors:—

“ STATISTICAL SOCIETY,

“ 12, ST. JAMES’S SQUARE,

“ London, 8th March, 1864.

“ The Auditors appointed to examine the Accounts of the Statistical Society for the year 1863

“ REPORT :—

“ That they have carefully compared the Entries in the Books, with the several Vouchers for the same, from the 1st January to the 31st December, 1863, and find them correct. The *Receipts* (including the Balance from 1862, 232*l.* 19*s.* 4*d.*) have been 999*l.* 9*s.* -*d.*, and the *Payments* 668*l.* 19*s.* 4*d.*, being a Balance in favour of the Society of 330*l.* 19*s.* 4*d.*

“ They have also examined the statement of *Assets* and *Liabilities* prepared by the Council; the *former* amount to 1,917*l.* 13*s.* 5*d.*, and the *latter* to 150*l.* 7*s.* -*d.*,—showing a Balance in favour of the Society of 1,767*l.* 6*s.* 5*d.*

“ They also find that at the end of 1862, the number of Fellows was 368, of whom 10 Died, 15 Resigned, and 2 are Defaulters, making in all 27, and 16 new Fellows were elected during the year, leaving 357 as the number of Fellows on the list, on the 31st December, 1863.

(Signed)

“ CORNELIUS WALFORD, }
“ HENRY G. BOHN, } *Auditors.*
“ R. C. GRIFFITH, }

The statement of Receipts and Payments, and Assets and Liabilities, is as follows:—

(I.)—RECEIPTS *and* PAYMENTS of the STATISTICAL SOCIETY for the YEAR 1863.

RECEIPTS.			PAYMENTS.		
	£	s. d.		£	s. d.
Balance in Bank, 31st December, 1862..	232	19 4	Rent.....	75	- -
1863.			Salaries	174	10 -
Dividends.....	26	1 3	Printing <i>Journal</i>	£270	14 6
Subscriptions:—			Advertising „	21	17 6
279 for 1863 at £2 2s. ..	£585	18 -			292 12 -
1 „ 1864 „ 2 2s. ..	2	2 -	Library	26	1 9
Arrears—8 „ 2 2s. ..	16	16 -	Index to vol. xxvi of <i>Journal</i>	4	4 -
			Stationery and Sundry Printing	38	13 3
	604	16 -	Postage.....	18	16 10
Composition	21	- -	Ordinary Meetings	24	3 6
<i>Journal</i> Sales	£88	2 5	Fire and Light	2	9 3
„ Advertisements....	26	10 -	Incidental	12	9 1
			Balance in Bank, } carried to 1864 .. }	£329	13 5
	114	12 5	Balance of Petty Cash in hands of Assist. Secretary. }	- 15	11
				330	9 4
	£999	9 -		£999	9 -

(II.)—BALANCE SHEET of ASSETS *and* LIABILITIES on 31st DECEMBER, 1863.

LIABILITIES.			ASSETS.		
	£	s. d.		£	s. d.
Printing <i>Journal</i> for Dec., } 1863	76	4 3	Cash Balance	329	13 5
Printing General Index to last Ten Volumes of } <i>Journal</i>	49	18 -	Investments:—		
Stationery and Sundry Printing	9	6 9	3 per Cent. Consols } (328 <i>l.</i> 15 <i>s.</i> 4 <i>d.</i>) ... }	cost £300	
	135	9 -	New 3 per Cents. } (569 <i>l.</i> 17 <i>s.</i>)	„ 567	
Advertising Dec. <i>Journal</i> ..	10	14 -		867	- -
Index to vol. xxvi (1863)....	4	4 -	Property (Estimated Value):—		
	14	18 -	Books in Library	£400	
Balance in favour of Society	1,767	6 5	<i>Journals</i> in Stock	200	
	£1,917	13 5	Furniture	100	
				700	- -
			Arrears due and recoverable (say) ..	21	- -
				£1,917	13 5

On CERTAIN RESULTS *and* DEFECTS of the REPORTS of the REGISTRAR-GENERAL. By WILLIAM LUCAS SARGANT, *Author of "Social Innovators and their Schemes," "Science of Social Opulence," &c.*

[Read before the Statistical Society, 16th February, 1864.]

THE principal conclusions at which I arrive in the following paper are these:—

1. Comparing the last decennial period (1851-60) with the previous one (1841-50), the improvement in the rate of mortality is very small, and is far from fulfilling the expectations of sanitary reformers, p. 175. The excess of mortality in towns as compared with that of rural districts, is an evil too deeply seated to be corrected by improved drainage and water-supply, p. 177.

2. The rate of mortality among young children has been greatly exaggerated; partly through an erroneous mode of calculation, p. 181.

3. The infant death-rate of London is low: the death-rate of London children *past* infancy is singularly *high* by comparison, p. 198. The Bethnal Green statistics are remarkable, p. 199.

4. The rate of farm wages has little comparative influence on the death-rates of counties, p. 184.

5. Dr. Gairdner's opinions published in the "Social Science Transactions for 1860" are unfounded, p. 204—207.

6. The *male* death-rate is the true test of comparative mortality, p. 179.

7. In comparing one place with another, the *ages* of the inhabitants must be taken into account. More deaths will happen in a healthy foundling hospital than in an unhealthy barrack, p. 173.

8. The *classes* of society must also be taken into account. It is useless to compare Whitechapel with Clifton.

9. In comparing one town with another, we must take the *borough* and not the parish which bears the name of the borough. The Registrar-General takes the parish in some cases; and in other cases a large district with the town for its centre, p. 187.

10. Neglect of the precautions mentioned in 6, 7, 8, and 9, has led to some false inferences. Of the very great provincial towns Birmingham is the healthiest: but the Registrar-General represents it as *less* healthy than London by $\frac{2\frac{1}{2}}{1000}$ or $\frac{3}{1000}$; I contend that it is considerably *more* healthy than London, pp. 203, 204.

11. Some alterations are required in the Registrar-General's Reports. Every volume ought to have a preface with instructions to

inquirers: with examples of modes of calculating the rates of mortality: with the latest life table, male and female, or notice where to find it, pp. 207—210.

The boroughs ought to have their mortality given: and the substitution of parishes and districts in the places and under the names of boroughs ought to be abandoned.

The tables occasionally given, *e.g.*, at XX, xix, should be explained in an intelligible manner, p. 196; and a distinction should be drawn between the two modes of calculating the death-rates:—viz. from the number left alive, and from the number exposed to the risk of death, p. 181.

A better and fuller 10 years' volume is wanted, with male and female population distinguished; and with columns of percentages of every district, sub-district, and borough, pp. 207, 208.

Introduction.

The title of this paper indicates my intentions in writing it. I have presumed to think that the Registrar-General fails to supply us with some results that it is important for us to know; and further, that the returns themselves are as yet imperfect. The general excellence of the reports is confessed by all; and if I had undertaken the task of forming an estimate of their value, I should have had to perform the first and most pleasing duty of a critic, by praising the copiousness of their materials and the lucidity of their arrangements. The task I have set myself is a far humbler one: it is to call the attention of this Society to some parts of the reports which, as I have found, present needless difficulties to inquirers; as well as to suggest and partly supply final results hitherto withheld.

When the system of registration was established more than a quarter of a century ago, the first object proposed was, to furnish Parliament with facts necessary for sound legislation as to the marriages, births, deaths, and health of the people. This object has undoubtedly been to a considerable degree attained. The conclusive evidence supplied of the comparative unhealthiness of towns, has led to sanitary measures which have not altogether failed to lessen the reproach. The standard of average mortality deduced from the registers, demonstrated the murderous waste of life that had long been going on in our barracks; and introduced changes which, we are told, have greatly lessened the evil. I wish it were found possible to go a step further, by carrying into effect the authoritative suggestion of employing the soldiers in trades. Perhaps it is to the same ascertained standard that we must attribute the present movement in favour of our Indian army: though to condemn its sanitary management it was unnecessary to go farther than our own barracks, which, unhealthy as they were, were palaces of health compared with

those of India. On the whole then, the Registrar-General's office has not been barren.

The reports however, are mines to be worked by men who are not legislators. All students of social economy should naturally resort to them for materials: so should those who want sanitary information as to a county or a town; particularly the members of town-councils. To such inquirers the greatest facilities ought to be given, by an intelligible arrangement of the tables, by copious indexes, and by preliminary instructions. I shall have to point out many deficiencies in these respects.

Prudence compels me to confess that many errors may be found in the schedules I have appended. The calculations I had to make were so numerous as to occupy part of every day during six months; and I know by experience that I cannot attain perfect accuracy: but I do hope that there is no blunder of sufficient importance to vitiate my conclusions.

I.

In the appendix will be found three Tables, A, B, and C: I will proceed to explain these, column by column.

Appendix A.—Table A has a series of figures relating to all England and Wales, to London, to 39 English counties, to the three ridings of Yorkshire, as well as to North Wales and South Wales, each reckoned as one county.

Column 1—contains simply the population of each division as determined by the recent *census*.

Column 2—contains the population of each division as given by the Registrar-General. An uninitiated person is surprised to find that these two enumerations vary considerably: Bedfordshire for example appearing in one column with 5,000 more persons than in the other column; Berks with 30,000 more. The explanation is this:—the Registrar-General, on commencing operations in 1837, instead of dividing the country anew, adopted the districts already formed by the Poor-Law Board; and these divisions, made for the convenience of pauper management, occasionally absorbed a corner of one county in a union of another county. Such allocations, if well explained in the registers, would not be inconvenient. But at present they are not well understood except by experts, because no warning to inquirers is prefixed. Thus, if I want to find Edgbaston, I look in the index, but it is not there: I search through the sub-districts of Warwickshire, but in vain: if I possess unusual patience I discover my parish at last removed from its own county to Worcestershire. I have now learnt the lesson which a preface ought to have given me; but a casual inquirer generally shuts the volume for ever. This evil would be easily remedied.

Columns 3 and 4—give the density of population in each division. We all know that a town life is unfavourable to health, and that a closely packed population has a high rate of mortality. In column 3 we have the number of acres to each person: the number being for all England and Wales less than 2; for London $\frac{1}{50}$ th; for Westmoreland nearly 8; for North and South Wales 4 to 5. But this test of crowding is imperfect; because a particular division, North Wales, *e.g.*, with 5 acres to each person, might have 4 acres taken up with hills and wastes and waters; while the inhabitants were generally packed in a few towns. Column 4 is intended to correct this possible error: I constructed it by adding together in each county, the population of all the towns enumerated in the census, and then comparing this total urban population with the total rural population of the same county. I find that in Bedfordshire, Cambridgeshire, the North Riding, and some other parts, the rural population is about twice as great as the town population; whereas in North Wales it is eight times as great, in South Wales and Westmoreland four times as great, in Huntingdonshire and Rutlandshire three times as great: that in Nottinghamshire, Worcestershire, the East Riding and the West Riding, the town and the country are about equal; but that in Lancashire, Warwickshire, and Surrey (extra metropolitan) the rural population is only half that of the towns. And this column No. 4 does not give the same results as the previous column of acreage to persons; as may be seen by comparing Westmoreland and Wales. I have perhaps made a mistake in taking all the towns in the census, *i.e.* all towns of 2,000 inhabitants and upwards: if time and patience had permitted, I would have given other columns limited to towns of 5,000, 10,000, or 20,000. I believe however, that column 4 as it stands supplies a better test of crowding or sparseness, than does column 3 with only the acreage per head.

Column 5.—In the fifth column I copy from the census the decennial increase of the counties; which is great in some, and small in others, while in five instances there is a decrease. The high rate of increase is generally found where great towns prevail; though there has been a marked increase in some counties in which, as seen in column 4, the rural population is greatest; as in Essex, Herefordshire, and Wales.

Specific Mortality.—One point is here deserving of attention. The ages of persons living and dying in one place vary considerably from the ages of persons living and dying in another. Dr. Price, in the absence of any enumeration, conjectured that in consequence of the large immigration of young persons, the towns contained a superabundance of the healthiest ages; and he contended that the numerous deaths in towns were the more disgraceful on that account. On the other hand it might have been guessed that the

adult immigrants soon married and had a brood of children, and by the inevitable prevalence of deaths among these children, increased the apparent mortality of the towns. In a foundling hospital which only retained the children till 5 years old, the death-rate would be numerically high, however healthy the children might be; and a town with an abnormal number of young children would in that respect, though in a low degree, resemble a foundling hospital. A high numerical mortality so caused, would not prove unhealthiness. Dr. Price's conjecture and the antagonistic conjecture could be tested only by a comparison of facts.

Seven or eight years ago,* I spent some time in comparing what I ventured to call the *Specific Mortality* of all England, Cornwall, London, Liverpool, Manchester, and Birmingham. I must content myself with stating that I found the differences less than I had suspected: that taking 1,000 deaths as the standard, Cornwall was worse than it appeared by 18; London was worse by 29; Liverpool (much damaged by cholera and Irish famine) was worse by 68; Manchester was better by 9, and Birmingham was better by 28. Thus, comparing the two extremes, London and Birmingham, there was an appreciable difference of $\frac{57}{1000}$, or nearly $\frac{1}{18}$ th part.

A misunderstanding of this principle has made it appear as an apology for parental neglect. Now there are two ways in which a place may have a high infantile mortality:—the first is the existence of an abnormally large number of infants; the second is the prevalence of parental neglect or other circumstances unfavourable to infant life. The former is the case with which we are now dealing. But in no case can the deaths of 1,000 infants be held to indicate the degree of insalubrity which the deaths of 1,000 youths indicate.

Column 6—gives the number of persons living on an average in each house. On this I have only one remark to make:—that though a low average is generally satisfactory, as showing the possession of a separate house by each family, yet a higher average is in particular parishes a result of opulence; because among the richer classes the family is increased by the domestic servants; so that in St. George's Hanover-square for example, a high average in a house does not indicate crowding as it does in Shoreditch.

Columns 7 and 8—supply the rate of mortality in each county, as well as for London and for the whole country: first for the ten years ending at Christmas 1850, and then for the ten years ending at Christmas 1860. The former I have had to calculate for myself: the latter I copy from the table of the register (XXIII, xiv).† By

* "Economy of the Labouring Classes," 445.

† The Registrar's figures are slightly different from mine. The death-rate is commonly reckoned to be $\frac{10 \text{ years' deaths} \times 100}{\text{average population}}$, giving for all England and

glancing from one to the other, we can judge of the sanitary progress in each county.

For all England and Wales the death-rate during the earlier period was 22·28 to the 1,000: during the latter period it was 22·16. These two numbers approximate so nearly as to prevent us from claiming any palpable improvement during the second decade. Nor shall we derive any comfort from going back to an earlier register; for the death-rate from the commencement of the register to 1845 was only 21·76, a number lower than those I have given by about $\frac{1}{50}$ th part. Remembering the inevitably crude state of the registers in their earlier years, I think little of this second comparison; but on the whole I feel that the absence of progress is a severe disappointment. While by a few years of earnest effort the mortality among our soldiers has been reduced to a comparatively low rate from a shamefully high one; while we confidently hope that an equal or a greater improvement will soon be effected in our barracks abroad; we have to confess that our boards of health, our inspectors of nuisances, our millions spent on drainage, our grand aqueducts and our subterraneous rivers, have left us to die as we died before. We still hear that this place has ceased to be a charnel-house since its thorough drainage was completed; that the closing of the cellar-dwellings has saved thousands of lives annually: but when we get at the totals of the kingdom, we have lost in one part what we have gained in another.

Even under this discouragement I do not regret the costly efforts which we have made to purify the country. It is in itself an excellent thing to banish filth and stenches and to secure a purer water to drink. Besides, though the number of lives saved has not been large enough to tell sensibly on the registers, yet the most miserable of our people must have been spared much suffering and some demoralisation.

The percentage in our favour too, is somewhat larger than it looks. Our population becomes in each decade more urban and less rural: we ought to learn whether this variation accounts for our slow progress.

Of the increase of two millions from 1851 to 1861, far more than half belongs to the counties in which there is a prevalence of towns or mines: to Middlesex, Kent, Surrey, Hants, Lancashire, Cheshire, Staffordshire, Warwickshire, Durham, Northumberland: and even in

Wales 22·16 against the Registrar's 22·24; and for London 23·63 against the Registrar's 23·77. For the purpose of comparison with previous periods the difference is worth noting. The difference is caused by the Registrar-General's including in the average the intercalated years, instead of confining the calculation to the two extremes from which the intercalated years are reckoned. This mode is more accurate, but too tedious for ordinary purposes.

counties which have a predominance of rural population, as Cornwall, Derbyshire, Northamptonshire, the increase may have taken place in towns. But let us see what result would follow if we assumed the whole 2 millions of increase to have taken place in towns; and if we assumed further that at the penultimate census of 1851, the town and the rural population were equal. We should then have,

In 1851	9 millions in towns,	9 millions in the country.
„ '61	11 „	9 „

If we turn to the Register XXI, xxx, we shall find the population divided in a similar way, but with a considerable preponderance of rural population. The respective rates of mortality are set down as 20 and $26\frac{1}{2}$. Assuming the same difference from 1851-60, the calculated death-rate of $22\frac{1}{4}$ gives 19 for the country death-rate and $25\frac{1}{2}$ for the town. The account will then stand thus:

Assumed Mortality:—

1851	9 millions of town at $25\frac{1}{2}$ and 9 millions of country at 19	Average. = 22'25.
'61	11 „ $25\frac{1}{2}$ „ 9 „	19 = 22'58.

From this it follows that on the assumptions I have made, the last decennial death-rate ought to have been '33 in the 1,000 worse than the previous decennial death-rate. But the case is not really so strong as this; and even after allowing for the small improvement exhibited in columns 6 and 7, the advance is too trifling to be worth notice: for if the year 1860, instead of being a favourable one, had been as unhealthy as 1854, the improvement for the 10 years would have disappeared. Any conclusion founded upon so slight a variation, is open to the censure passed by Professor Radicke on rash inferences in the case of medical observations.

For the sake of simplicity I assumed that the decennial increase of 2 millions took place in towns; but it should be observed that so large a part as 840,000 was added by London and Lancashire; and further, that the fall in the death-rate of both of these was so considerable, that the two together did not weigh more heavily in the scale during the second period than during the first.

I am obliged to conclude therefore, that the result of our national efforts for purification has been, as regards the death-rate, something like a failure; and that it has by no means realised our magnificent expectations of reducing the mortality of towns to that of the country as it was, and of reducing the mortality of the country to that of Grayrigg in Westmoreland, or of Calbourne in the Isle of Wight.

I have for some years suspected that too much stress has been laid on external causes of death; particularly on bad drainage and

impure water : and that any great general reduction of mortality must be effected by means far different from the laying out of millions, or scores of millions, of money. As to towns:—people generally live and work under cover. Now Mr. Neison has long inferred from his observations on friendly societies, that the difference of longevity in town and country, is not principally caused by the quality of the air breathed: for he has found that sedentary pursuits in the country are something like as injurious as they are in towns. It is not so much *country* air that is wanted as *open* air. But I have no hope of inducing our mechanics to pull out their glazed windows: nor am I sure that they could do their nicer work with numbed fingers. Much less could we get textile factories thrown open. And I see no other way of giving to in-door occupations the salubrity of those carried on out of doors.

Then as to both town and country, there are the questions of habits, of morals, of education. Improve these, and mortality will diminish: but how slow is the progress! I do not despair of raising the working classes to the present level of the middle classes, and I hope that my great-grandsons may see the improvement. Happily, such a change would probably be permanent; and I no more fear that, in the ordinary course of events, the lower classes once raised will sink again, than I fear that the educated classes will relapse into the drinking, swearing, practices of their grandfathers.

Comparing our death-rate with that of other countries, we have moderate grounds for self-gratulation. We much surpass Russia and Germany; and our small superiority over France is augmented by the necessary allowance for the greater prevalence of our towns over our rural districts. If we go to Sweden, we find that its long-continued and accurate statistics prove a lower mortality than ours (*Statistical Journal*, xxv, 111); but the paucity of Swedish towns vitiates the comparison; and a separation of the town and the country (*Id.* p. 169) shows that the Swedes are inferior to us, especially in the towns. Norway, we find, during 30 years had the low death-rate of 18, a singularly favourable condition even for a purely agricultural people. Belgium from 1841-50 had a death-rate little exceeding ours.

Coming to those parts of our own country not included in the Registrar-General's Reports, Ireland has only now the first promise of a register. It has been conjectured that its mortality, in the absence of famine, is low: a strange result, if it be such, of chronic squalor and destitution.

Scotland has had a registration during several years, and the returns are remarkable. The lower Scotch, compared with the lower English, are a dirty people; worse housed, more addicted to spirit drinking, and exposed to a severer climate: yet they live

longer. Our Registrar-General attributes this superiority, as I have attributed that of Sweden, to the less prevalence of town populations; but the explanation is questionable. Scotland indeed, has no metropolis of three millions, but Glasgow is as large to Scotland as London is to England. Edinburgh weighs as heavily in the Scotch scale as the aggregate of two or three of our large towns in the English scale. Comparing the two registers (Scotch Register IV, xxviii and English Register XXI, xxx) we find that the Scotch town population is more than a third of the whole, and the English town population is less than a half ($\cdot 37$ to $\cdot 46$): a trifling difference. Some allowance however, is due to the fact that the mortality of towns is apt to increase in a geometrical ratio as the numbers increase; though this is not true of our greatest town, London.

Let us now appeal to the Scotch Registrar. In his Fourth Report (pp. xxv and xxviii) he says that in the Insular Districts the death-rate is only $14\cdot 6$ in the 1,000. This applies to 162,000 persons; a number relatively equal to a million in England. We find no such low rate among ourselves. Little Rutland, with 23,000 has a death-rate of $\frac{1\cdot 8}{1000}$: Surrey with 273,000 and Westmoreland with 61,000, are above $\frac{1\cdot 8}{1000}$. Thus 357,000 people in the healthiest of our counties have a death-rate of 18 at least: an excess of a fourth above that of the Scotch insular districts.*

The Scotch mainland rural districts have a death-rate of $\frac{1\cdot 7\frac{1}{2}}{1000}$, and these contain more than half the population. Our rural districts have a death-rate of 20; *i.e.* an excess of $2\frac{1}{2}$ above those of Scotland. (English Registrar-General XXI, xxx.)

On the other hand, our town districts have a death-rate of only $25\frac{1}{2}$ against $26\frac{1}{2}$ in the case of Scotland.

I therefore conclude that notwithstanding dirt, cold, and whiskey, the north of our island has a decided superiority to the south, in the rural districts, but some inferiority in the towns. It appears also, that a Scotchman by migrating from the country to the town, loses more than an Englishman does by the same change; the Scotchman losing $\frac{9}{1000}$, the Englishman only $\frac{5\frac{1}{2}}{1000}$: and perhaps it is here that the dirt and the whiskey produce their fatal effects. The farm-wages of Scotland are now something higher than ours, but there is not any notable difference. It is worth inquiry whether the superiority of Scotch education, as shown by the marriage signatures, is not an important element in the estimate, especially with reference to the judicious treatment of infants. London, with a comparatively

* From a paper read by Dr. Farr before the Royal Society, 7th April, 1859, it appears that in the "Healthy Districts" of England, from 1849-53, the death-rate was $\frac{1\cdot 7\frac{1}{2}}{1000}$. See p. 864.

high state of education, and a low infant mortality, strengthens this presumption.

Column 9.—My next column gives the death-rate of males only. The Registrar-General in one of his earliest reports, propounded an opinion, that the respective occupations of the two sexes made the female death-rate more uniform than the male. The reverse seems to me to be true.

If we compare one place with another, we find that the proportion of males to females varies greatly, though in most cases the women are the more numerous. The excess of females is occasionally very large. It is not the manufacturing districts which furnish the most remarkable examples: for Manchester, Salford, Bradford, have a female excess of only 11 to 15 per cent.; while Birmingham has only 5 per cent., and Sheffield has even a small excess of males. It is in the parishes where persons of independent means congregate that the disproportion is most marked: as, for example, in St. George's Hanover square, where females predominate by 34 per cent., and females over 20 years old predominate by 44 per cent.; and still more in Leamington which has 43 per cent. more females, in Edgbaston parish which has 45 per cent. more, and in Clifton which has 73 per cent. more. It needs no argument to prove that the larger part of this surplus consists of domestic servants.

Now it has long been remarked that this introduces a disturbing element into the calculations of mortality. Domestic servants are for the most part of very favourable ages; with the sickly members eliminated; to a great extent immigrants from other parishes, who seldom die in service, but rather in their relations' houses or in hospitals. Therefore, for such places as Hanover Square or Leamington, the male mortality is the more instructive. I will pursue this topic further when I explain my Tables B and C, of town populations. I will only remark now, that the excess of females over males for all England is rather more than 5 per cent.; that the excess in London is almost 15 per cent.: that the male death-rate for all England exceeds the general death-rate by only 8 in 10,000, while the excess in London is 19 in 10,000. It appears therefore, that the female servants in London much disturb the general death-rate; and that resorting to the male death-rate as the truer test, London instead of being only $1\frac{1}{2}$ worse than all England, is more than $2\frac{1}{2}$ worse.

In a few of the counties, the male and the female death-rates vary singularly. In Bucks, Northamptonshire, and Rutlandshire the male death-rate is less than the female: in Derbyshire and Durham they are nearly uniform.

Dismissing the comparison, and looking at the male death-rate

only, we find that of the counties, Lancashire is the worst with $27\frac{1}{2}$: then come Staffordshire and the West Riding with 25; Warwickshire with 24; Cheshire, Durham, Monmouthshire, Northumberland, Nottinghamshire, and the East Riding with 23. It will be asked whether this male death-rate does not increase, just as the prevalence of the town population increases. My column 4 enables me to answer that this is not so. Lancashire and Warwickshire have just the same proportions of town to country, but their respective male death-rates are $27\frac{1}{2}$ and 24: London is nearly all town, but its male death-rate is almost 2 less than that of Lancashire, which has a considerable rural district.

The best counties as to male deaths are Rutland and Surrey with 18; Westmoreland with 19; Dorsetshire, Essex, Herts, Lincolnshire, the North Riding, Salop, Suffolk, and Sussex, all with 20.

But here is another defect, as I think, in the Registrar's volumes. In order to calculate the male death-rate, we must know the number of male deaths and the number of males living. The register supplies the one but not the other. The male deaths are scrupulously recorded; but the male population is not separated from the female. To have to refer to the census is a trifling obstacle to me, but it is a formidable obstacle to an occasional inquirer. And even on me a wearisome task is imposed.* The census very properly furnishes a multitude of particulars but not the totals. For example: to calculate the male death-rate of Bolton, I ascertain from the Register, XXIII, 234, that Bolton lost in 10 years 17,028 males: but turning to the census for the male population, instead of finding this given in one line, I learn that Kersley township had 2,043 in 1851 and 2,424 in 1861; that Farnworth had 3,085 and 4,113 respectively; and so on through every sub-district and every minor division of every sub-district of which the district of Bolton consists. To get my totals I must add up two columns each containing 30 lines. The register ought to supply these totals. The case of York is worse; for it requires the adding up of two columns each of 96 lines: and Chester has two columns each of 120 lines. The counties fortunately, have the totals given (Census I, 194), but these should be copied into the register.

Column 10.—I arrive now at columns which raise questions of peculiar interest:—I mean as to the death-rate of young children. Sanitary reformers, in their zealous advocacy of improvements, have

* I leave this passage as I read it to the Society; but the totals have been pointed out to me in another part of the census. I had trusted too implicitly to the census index, which gives no reference to the places where the totals occur. The logical arrangement of the census is excellent; but for reference a full index surpasses the best logic.

made statements of a shocking character. Seventy years ago, Arthur Young told his readers that the London Foundling Hospital made it a boast in 1756, that only three-fourths of the children died in the year. We learn also from official authority, that in Dublin about the same time, the Foundling Hospital lost nearly half the children even before they were sent out to nurse. As to the present day, loose statements are made, about a frightful mortality in some parts of England. Dr. Gairdner, an eminent Edinburgh physician, asserts ("Social Science Transactions, 1860," 644) that in the great towns far more than one-fourth of the infants die in the first year. In an early number of the *Journal* of this Society (v, 230), appears a calculation made by the Secretary of the Poor-Law Commissioners, from which it appears that among agricultural labourers, artizans, and servants, half the children die under 5 years old. Such assertions though authoritative are baseless; but a hundred pens reproduce them.

I am acquainted with three modes of arriving at these inaccurate results :

1. The first of these consists in calculating the mean age of those who die, and in assuming that as this age is high or low, the rate of mortality is high or low : it overlooks the fact that in whatever institution, or neighbourhood, children are unusually numerous, the mean age of the deaths *must* be low.

2. The second mode is founded on the proportion of young deaths to all deaths. In England, the male and female deaths under 5 years old, are about two-fifths of all deaths. The false conclusion is drawn, that two-fifths of the children born, die under 5 years.

The Registrar-General has condemned both these modes, and has pointed out that they both omit the consideration of the number of children living. With a given condition of health, the number of deaths must be in proportion to the number of children among whom deaths can take place.

3. But as far as I know, the Registrar-General has not condemned the third mode. This consists in calculating the deaths from the number of persons left alive, instead of from the number who have been exposed to the risk of death.

If 1,360 new-born infants are placed in an asylum on the same day, and if their number is reduced by death, in 5 years, to 1,000, the quinquennial death-rate is $\frac{360}{1360}$ or $\frac{265}{1000}$; but the mode I condemn would call the death-rate $\frac{360}{1000}$. The difference between 265 and 360 is very large. I give this imaginary case merely as an illustration of the *principle*.

The case I originally gave was a different one, and assumed the introduction of new-born infants from time to time, to fill up the gaps in the numbers. To this it was objected that the infants so

introduced after the first day, were not exposed to the risk of death during the whole 5 years.

The question is, I confess, a very difficult one : to discuss it fully, would require more space than I have at command. But those who object to my proposed mode, have two points to consider. First, my proposed mode, applied to the Census of 1851 and 1861, gives a result as to childrens' deaths pretty nearly the same as the result deduced from the births : secondly, my proposed mode gives a result not very far from the same as that in the life table (Registrar-General, XII). On the other hand, the results obtained by the mode I condemn, very wide of those deduced from the Censuses, and from those of the life table. Judged by results, my mode is right, and the other is wrong.

My column 10 gives the death-rate of male infants under 1 year old ; and I will first enumerate the best of the counties in order of merit. In all England the deaths to 1,000 are 161 : in Westmoreland 104 ; Rutland and Surrey (extra metropolitan) 126 ; Hants, Sussex, and Devon 130 ; North Wales 131 ; the North Riding 136 ; Herefordshire and South Wales 137 ; Cornwall, Cumberland, and Herts 139 ; Kent and Middlesex (extra metropolitan) 141 ; Salop 142 ; Oxon 145.

In order of *demerit*, (against 161 for all England) we have Lancashire 192 ; Staffordshire 182 ; East Riding 181 ; Notts 180 ; West Riding 177 ; Warwickshire 176 ; Leicestershire 175 ; Norfolk 174 ; Bedfordshire and Cambridgeshire 172 ; Cheshire 170 ; Huntingdonshire 164. London has only the same number as all England ;—161. This is for the first year of life, and for boys only : the deaths of girls are fewer by far.

Column 11.—I now come to the deaths in the 2nd, 3rd, 4th, and 5th years of life ; *i.e.*, of children under 5 omitting the first year. We might expect to find that this column would follow the proportions of the last ; that counties fatal to infants, would be about equally fatal to children past infancy : but this is not altogether the case. The most remarkable exception to uniformity is London, which loses only about as many infants as the whole kingdom, but which loses nearly *one-third more* young children (over 1 and under 5) than the whole kingdom. I will reserve my remarks on this example till we come to Table B.

There are several counties which vary in the opposite direction : *i.e.*, in which the infants die relatively faster than the young children. Bedfordshire, Cambridgeshire, and Norfolk, are examples. Column 14 gives the ratio for each county, and I shall come to it immediately.

As to the absolute number of deaths of young children over 1 and under 5, the rate per 1,000 is as follows. All England and

Wales 105; London 137; Rutland 56; Westmoreland 64; the North Riding 66; Herefordshire 67; Suffolk 69; Lincolnshire 70; Herts 73; Huntingdonshire 74; Norfolk 76; Salop and Somerset 77; Dorset and Sussex 79; Wilts, Oxon, and North Wales 80; Northamptonshire 81; Surrey (extra metropolitan) 84.

The bad counties come thus. All England 105; Lancashire 144; London 137; Staffordshire 126; Warwickshire and Monmouthshire 113; Durham and the West Riding 111.

Column 12.—My next column includes the results of the two previous ones, by giving the death-rate of children from birth till 5 years old.

I have already mentioned the exaggerated statements made on this topic, by persons who erroneously believe that in some places half the children die under 5. I shall show presently that this is not true of the worst town in the worst county; and is far from being true of any other place.

The worst counties lose as follows. All England 266; Lancashire 336; London 298; Staffordshire 308; Warwickshire 289; the West Riding 287; Durham and Notts 275; the East Riding 272; Cheshire 271; Leicestershire 268.

All these numbers are for boys only: a return of boys and girls together would be more favourable. Then we ought carefully to recollect that the prevalence of towns in any county makes a high death-rate inevitable. In Lancashire and Warwickshire the town population is more than twice as numerous as the rural population (100 to 43): whereas in Leicestershire the rural population is much in excess (137 to 100).

Column 13.—Some persons would feel sure that the death-rate of children in each locality, would follow the general death-rate of the same locality. Other persons would expect an abnormally high juvenile death-rate in places where women are employed away from home. It may be true also, that particular climates are favourable to one age rather than another: that the mildness of South Devon may spare the fragile constitution of infancy, while the severer air of Yorkshire may brace the nerves of parents. My column 13 is an attempt to make the comparison between the infantile and the general death-rate.

In all England and Wales, the death-rate under 1, is 7 times as great as the general death-rate: in London it is over $6\frac{1}{4}$ times as great (6·26); Bedfordshire goes up to 8 times; Lincolnshire and Cambridgeshire about the same; Northamptonshire nearly the same; Norfolk, Notts, the East Riding and Leicestershire to a little under 8. London as we have seen, stands singularly low (6·26); yet Hants is still lower (6·19), and Devonshire is as low as London. Many other counties are a good deal lower than the average of England.

Still confining our attention to the ratio of infantile to general death-rate, we see that it is not in the great manufacturing counties that the ratio is high. Even Lancashire with its frightful loss of infants, loses its people of other ages in equal proportion.

Column 14—is the one to which I referred, in commenting upon columns 10 and 11: it is a comparison, not of young with all ages, but of young with young. I was led to it by the remarkable contrast in London, between the mortality of infants and the mortality of other young children.

I will use the word infants here in the sense of all children under 1; and the word children for all children over 1 and under 5. Comparing, throughout the country, the deaths of children for the four years with the deaths of infants for the one year, they are 65 to 100; so that for each year on an average they are only one-sixth as numerous. Against 100 infants all England loses 16 children each year: London loses 21; Lancashire, South Wales, and Monmouthshire 19; Devon and Hants 18; Northumberland $17\frac{1}{2}$. The low ratios are in Lincolnshire, Norfolk, and Rutland, 11; Suffolk, Northampton, the North Riding, Herefordshire, and Bedfordshire, 12; the East Riding, Bucks, and Cambridgeshire, $12\frac{1}{2}$. We must remember that these are only proportions: Devon, *e.g.*, stands unfavourably, not because it loses many children, but because it loses very few infants; and London looks far worse than Lancashire partly because it loses more children; to a great degree because it loses far fewer infants.

Column 15.—I have added two columns for the convenience of those who are disposed to conjecture the causes of the varying mortality. The first gives the rate of farm-wages in recent years, according to Mr. Purdy's valuable paper. (*Statistical Journal*, xxiv, 328.) We know from other documents,* that the middle and upper classes are longer-lived than the labouring class; and that this is especially true of children. We naturally inquire whether within each class the more affluent are longer-lived than the less affluent: whether, *e.g.*, the well paid labourer lives longer than his ill paid brother.

There are two distinct kinds of labourers, the town and the country: we know that town wages are far higher than country wages; we know also that town mortality is not lower, but far higher, than country mortality. So far the deaths increase with the affluence. But the superiority of country labourers is probably owing to their working out of doors, and not to their low remuneration. It is probable at the same time, that the high wages of many

* See Vital Statistics of the Society of Friends in *Statistical Journal*, xxii, 221: and of the Peerage in *Statistical Journal*, xxvi, 54.

artizans shorten their lives by furnishing an excessive allowance of beer and spirits.

The really valuable comparison however, is between one town district with another, and between one rural district with another. Of all the counties, Northumberland, Cumberland, and Westmoreland, have the highest farm wages; and the male mortality there is pretty good, good, and very good, respectively. The four counties in which the farm wages are lowest, are Devon, Dorset, Wilts, and Hereford; and in all these the male death-rate is at least good. Taking the aggregate death-rates of these seven counties, the ill paid are to the well paid as $\frac{2.05}{2.09}$, giving a trifling advantage to the ill paid. Among children under 5, the ill paid have also a small advantage, as $\frac{2.19}{2.21}$. No one will suppose that the low wages of the south are the cause of this trifling superiority; but I think we must infer that even these miserable wages are sufficient in the south to maintain health. The average wages of the three highest counties are 14s. 5d.: those of the four lowest are only 9s. 3d.; a difference of more than 5s. a-week. Gladly therefore, as I would see an augmented rate of wages among the southern labourers, I cannot hope that the improvement would of itself much lessen the rate of their mortality.

(I should mention that my averages are struck roughly, by counties, and not by the aggregate populations of the counties, *i.e.*, Devonshire for instance, with a population of 584,000, counts for as much as Herefordshire with 124,000).

Column 16, the last of this table, gives the number of women in each county who sign the marriage register: a test of education generally accepted as the most accurate we can get. I have given the women's signatures rather than the men's, because the state of instruction of mothers has the more direct bearing on the health of children.

It is remarkable (Registrar-General XXIII, vi) that in 12 counties (reckoning North and South Wales each as a county), more women than men can write: the difference being as much as from 5 to 8 in 100 marriages. In many counties however, there is a decided superiority on the male side: as in Lancashire, where 71 men and only 46 women sign; and as in the West Riding and South Wales, where there is a difference of 22 between the sexes.

One interesting question presents itself:—does juvenile mortality diminish, *ceteris paribus*, as the education of the mothers improves? It seems probable that such should be the case; and there are known facts which support the opinion. M. Le Play tells us that in one ill peopled part of Russia, a reward is offered to parents who bring up six children, and that the reward is seldom earned. He attributes the great juvenile mortality to ignorant

treatment, such as exposing to the cold the children attacked with measles. In the progress of Sweden as we learn from the excellent paper by Mr. Hendriks (*Statistical Journal*, xxv, 111) far the greatest diminution of mortality has taken place among the very young.

Some facts in my tables point in the same direction. Of 100 women who marry in all England, the marriage register is signed by 64; in London by 81: and this surplus of female education in London is accompanied by a singularly low death-rate of infants. In Surrey (extra metropolitan) the education is as good as in London, and the juvenile deaths are very few. In the other counties near London the same law holds good; since Berkshire, Kent, Essex, Hertfordshire, and Buckinghamshire, are all above the average in female education, and below it in the infantile death-rate. Bucks is the worst of them in both respects. Lancashire supplies decided confirmation; for that unfortunate county is disgracefully low in female education, and notorious for its high juvenile death-rate.

As usual, there is apparent evidence in the opposite direction. Both the East Riding and the North Riding are remarkable for the general extension of female education: whereas the East Riding has a high juvenile death-rate, and the North Riding a low one. But the force of the comparison is much weakened by finding, when we consult my column 4, that the East Riding has as many towns as Notts or the West Riding, and that in the North Riding the country predominates greatly. It is not pretended that the education of mothers will counteract all evil influences.

I should be glad if I had the means of doing for the towns what I have done for the counties, in comparing female education and infantile death-rates of different places. Unfortunately I do not find in the reports any table of signatures in towns. The smallest county has it: the largest town has it not. This want ought to be supplied.

I cannot suppose that if we had such an account, we should find a uniform combination of high female education and low infantile death-rate. A great demand for the labour of women, will everywhere cause a neglect of maternal duties; and no degree of education will correct this evil. The case of Coventry confirms this obvious truth. The registers completely support the statement that the distress of that town saved the lives of hundreds of infants, by keeping their mothers at home.

Recapitulation of A.

I have now gone all through the columns of my first table, and I have few more remarks to make upon it. I may say that it

strengthens the notion that the worst counties as to mortality whether of adults or of children, are those in which great towns prevail. Formerly perhaps, we might have said in which great *manufacturing* towns prevail: but we now know that the ill sanitary condition of Lancashire is owing more to its great seaport than even to its manufacturing towns. London too, was once thought to be pre-eminent in deaths. We see now that it is far surpassed by one whole county, and all but equalled by another, even taking the true test of male mortality: besides that to compare town with country is an unfairly severe trial for the town.

We learn also, that the sanitary improvements of the country have as yet made little impression on its rate of mortality; and that the diminished death-rates of certain parts have unfortunately, been all but balanced by augmented death-rates in other parts. We see too, that the apparent healthiness of some parishes, set apart for the especial residence of the affluent, is partly owing to the fact that many of the numerous female servants go elsewhere to die; and we conclude that the male death-rate is there the true standard of longevity. We find that some parts are more favourable to adults, some to young children: and what is more extraordinary, that some parts are more favourable to infants and some to children who have survived the first year.

I will explain hereafter the mode in which I have calculated the juvenile death-rate; the ordinary mode of calculation by a comparison of the number living with the number dying being impossible as regards the towns, without further data than those at my command.

II.

TABLE B.

My second table, containing about 30 of the principal towns, has been more difficult, and has cost me more labour, than my Table A, of counties. My difficulty has arisen from the fact that the Registrar-General has treated the towns too much as mere constituent elements of counties, instead of recognizing their substantive existence as aggregates of people placed under very different circumstances, and exhibiting very different sanitary laws, from those found among the rural districts. Though he has given the births, marriages, and deaths, of each parish, he has not given them for the towns, since these are often made up of several parishes and parts of parishes. Besides this, his epitome of results is generally confined to counties; a disregard of towns not so marked in the earlier years of the register (*see* Report IX); though even then the parish in some cases, or the district in other cases, was made to do duty as a town.

Now as I have already pointed out, Liverpool, Manchester, Birmingham, Leeds, and Sheffield, have each a greater population than 11 of the smaller English counties; and there are only 10 of the larger counties which exceed Liverpool. But this comparison is not the most important matter. In the towns, the mortality is greater, the marriages and births are more numerous, the average age of the people is lower, the wages are much higher, the occupations are more sedentary, the minds are more lively. Yet for these fifteen years no epitome has been given of the vast collection of figures relating to them.

More than this; the form of registration is such that it is impossible for anyone outside of Somerset House to get at the results. A few years ago, Mr. Commissioner Hill took some part in a controversy as to the sanitary condition of the borough of which he is recorder: he referred to these reports to ascertain the mortality: he confessed that he found himself baffled. Now in such matters many lawyers are easily baffled: but Mr. Hill, besides being an eminent lawyer, is familiarly acquainted with what we now call social science; and is moreover an arithmetician of unusual excellence. A register unintelligible to him must be quite inaccessible to the public. With reference to the same controversy, two other gentlemen searched the reports; and so entirely with the same result, that they were driven to ask the local registrars to supply the figures they wanted. Of these two inquirers, one was the able editor of a newspaper, the other was a professional accountant in large practice. If the registers are sealed books to such men, what must they be to people generally?

I now proceed to explain, as I did with Table A, each column of figures.

Columns 1 and 2.—My first two columns state the population of the various towns, first as given by the *census*, and then as given by the *Registrar-General*. In noticing the corresponding columns in the table of counties, I pointed out that the Registrar made some counties contain 5 or 10 per cent. more or less than they contain by the census; and that as a consequence, certain border parishes were transplanted into counties to which they did not belong topographically.

But these county irregularities are nothing compared with those now before us. Liverpool with a census-population of 444,000, is reduced by the Registrar to 270,000: Manchester is reduced from 339,000 to 244,000; Birmingham, from 296 to 213; Bristol, from 154 to 66 (less than half); Leeds, from 207 to 118; Sheffield, from 185 to 128; Hull, from 98 to 57.

Other towns are greatly exaggerated: as Bath, from a census-population of 53,000 to a register-population of 68,000: Blackburn

from 63 to 120 (nearly double) ; Bolton from 70 to 130 ; Bradford from 106 to 196 ; Macclesfield from 36 to 62 ; Oldham from 72 to 111 ; York from 40 to 60 ; Wolverhampton from 61 to 127 (more than double). Comparing Bristol and Bradford by the census, Bristol is the larger by one-half ; by the register Bradford is three times as large as Bristol.

Chester has no independent existence ; it is merely a portion of the district of Great Boughton. On turning to that unknown place, you find that it consists of four sub-districts, of which Chester Castle and Chester Cathedral are two : but by adding together the register-populations of these two, you find that they exceed by one-third that of the city of Chester, which I must therefore pronounce to be absent from the reports.

Leamington again, is wanting, and appears only as a sub-district of Warwick.

Inquirers may certainly demand that Chester and Leamington should appear in the index ; and it is highly desirable that all sub-districts should be indexed.

One great evil attends this disregard of the real boundaries of towns :—I mean the weakening of that influence which the register ought to exercise over the municipal authorities. The boundaries of the great provincial boroughs are neither antiquated nor unmeaning : they have been drawn rather recently, and include pretty nearly all those whom business or pleasure has brought together so as in the aggregate to constitute a town. According to the modern habits of the middle classes, few persons except artisans and medical men reside at their places of business : employers generally live in the suburbs and environs of towns. The old parish therefore, contains the poorest and least healthy portions of the population ; while the neighbouring parishes contain the more affluent and healthy. But the borough includes both these kinds of population ; and is therefore the true town, of which the death-rate ought to be studied and quoted. The register fails to give the means of doing this. If we desire to compare the mortality of Liverpool with that of London, we easily find the deaths of the parish of Liverpool ; but for the deaths of the 174,000 persons who constitute the remainder of the borough, we may search in vain. If we want to make such a comparison for Blackburn, Bolton, or Bradford, we find districts called by those names, but each containing nearly twice as many souls as the real towns.

As an illustration of the difficulty of disentangling the necessary figures, I will take the case of Birmingham ; a case which my local knowledge, aided by some familiarity with the first volume of the recent census, enables me to explain. The borough consists of the parish of Birmingham, the hamlets of Deritend and of Duddeston,

and the parish of Edgbaston, which latter has been shifted by the registrar into Worcestershire. I propose to calculate the death-rate for the 10 years, 1851-60. To do this, I have to learn first, the average population, and secondly, the average deaths. The first I learn from the census; the second I have to pick out from the register for each portion separately.

The average deaths are a tenth part of the aggregate deaths during the 10 years. These are given for the parish at XXIII, 232, as 51,238. But as Deritend, Duddeston, and Edgbaston, are only sub-districts, I must refer for them to p. 292. It is likely enough that an inquirer, not seeing these sub-districts following the parish, and having no instructions elsewhere, may set about, as I did, to collect the deaths from the register of each year. Instructions ought to be furnished, unless it is desired to seal up the registers from profane inquirers.

The 10 years' deaths in Deritend, Duddeston, and Edgbaston, are found to be respectively, 5,985, 7,190, and 2,070: and adding these to the 51,238 deaths in the parish, we have a total in the borough of 66,483 for the 10 years; and an average of 6,648 for each year.

The census (I, xxi) has supplied me with the population of the borough in 1851 and 1861, and from these figures I infer the average of the 10 years. But to prevent mistake, I compare with this the populations given by the register. Adding together the numbers assigned to the parish, the two hamlets, and the parish of Edgbaston, I find that the total is too large by 2,795. After revising my figures again and again, I comfort myself with pronouncing that a difference of 2,795 in 264,458 is not a formidable one.

Subsequently however, I find an explanation of the difference, but I find it in the census, not in the register. I discover (Census I, 476) that what the register calls Edgbaston, is not the parish but a sub-district with that name attached to it: that it contains the parish indeed, but that it also contains the considerable agricultural parish of Northfield. The population of Northfield is 2,795, the very excess that had perplexed me.

But a correction is now required; because the deaths recorded against Edgbaston, are really the deaths of Northfield as well as of the parish of Edgbaston. Making a proportionate reduction, I conclude that the death-rate of the borough is 25: and this is near enough to the truth, though it involves the assumption that the agricultural parish of Northfield, and the suburban parish of Edgbaston, are equally healthy.

But if in this instance, with my local knowledge, and by turning, with that for my guide, backwards and forwards to the register and the census, I arrive at last only at a near approximation to the

truth; any attempt to understand the mortality of other boroughs must be hopeless. I find, *e.g.*, by the census (I, 59), that the borough of Liverpool consists of the parish of Liverpool, part of the parish of Toxteth Park, part of the parish of West Derby, and the townships of Everton and Kirkdale. Turning to the register, I see nothing of Kirkdale, and I find the mortality for the whole of Toxteth Park, with no note of what part of it belongs to the borough.

I confess that as regards Blackburn, Bolton, and Bradford, where the population given by the register is nearly twice as great as that given by the census, I have not made an attempt to calculate the death-rate of the boroughs. But I must remark that the places set down under these names, instead of being towns, are districts each with a town for a centre. When therefore, we are led to believe that the death-rate of two of these places is 26, and of the other 27, we are greatly misled, because such a statement implies that it is the towns which are intended.

It is equally untrue that the death-rate of Liverpool is 33, that of Manchester $31\frac{1}{2}$, that of Birmingham $26\frac{1}{2}$: these are the death-rates of the worst parts of these boroughs; and the mistake is peculiarly great as to Liverpool, because the population given by the register is unusually below that of the census.

This is the most serious deficiency I have to point out. The town councils of boroughs are responsible to the country for the adoption of sanitary measures within their boundaries. The first information they need is the comparative death-rates of their own and of other boroughs. If they require their town clerk, or their inspector of health, to consult the reports, they learn as the result that boroughs are unknown to the Registrar-General: that in one case a parish, containing probably the greater part of the borough, in another case a district twice as large as the borough, stands under the name of the borough itself. Though I have shown how the death-rate of one borough may be culled from the figures given, I have before given proof that men of unusual competency, with their faculties whetted by controversy, have failed to discover the mode of doing this. The remedy I will suggest elsewhere.

Column 3.—In my next column I state the number of acres there are, not as in the counties to each person, but to every 100 persons. This does not conclusively determine whether or not the people are crowded; because many towns have extensive areas not built on; others have vast docks and blocks of warehouses; Liverpool and London have a considerable expanse of water included in their acreage; and the areas given for places like Blackburn, Bolton, and Bradford, are those of districts and prove nothing as to the towns. A large nominal area therefore, may co-exist with crowding:

but a confined area, like that of Liverpool, further narrowed by water and warehouses, does definitively prove over-crowding. It appears that the densest populations, judged by this imperfect standard, are those of the parish of Liverpool with three-fourths of an acre of land and water to every 100 persons; of the parish of Birmingham with $1\frac{1}{4}$ acres of land; of the parish of Leeds with $1\frac{3}{4}$ acres; of Nottingham and Plymouth with $2\frac{1}{2}$ acres; of London and of the parish of Bristol with $2\frac{3}{4}$ acres; of Brighton with 3 acres. This order is far from corresponding with that of the death-rates: for though Liverpool is at the top of both lists, Manchester, which is a particularly unhealthy place, has 5 acres to every 100 persons, an area four times as great as that of Birmingham, the healthiest of the great towns.

Column 4—gives the increase of population as furnished by the register: information of little value, because the partial limits fixed on reduce the high decennial increase of Liverpool to 4 per cent., and that of Manchester to 7 per cent.; while Bristol is represented as being about stationary.

Column 5—consists of the number of persons in a house. London is well known as having a high number: but this is not entirely owing to the crowding of families into a part of the large old houses, and to the absence of detached cottages; it is also partly caused by the great number of domestic servants in London, just as in Bath, Brighton, and Cheltenham. Plymouth has, of all these towns, the highest number in a house:—viz., more than 10; against $5\frac{1}{2}$ in all England, and against nearly 8 in London. Gateshead, Newcastle-on-Tyne, and Sunderland, have about the same as London, and the parish of Liverpool has not much less. The manufacturing towns generally, do not much exceed all England.

Columns 6 and 7.—We now come to the death-rates of the towns: and I have given first, those for the ten years 1841-50, and then those for the ten years 1851-60. Comparing these two decennial periods, I find some examples of marked improvement. This is notably the case with several of the largest and most unhealthy places. The parish of Liverpool improved from 39 to 33; but so much of the frightful 39 was owing to the famine-stricken Irish driven across the straits to die, to say nothing of exceptional cholera (as in the case of Hull), that I cannot pronounce what has been the real amendment caused by the closing of cellars and by other sanitary measures. Hull improved from 31 to 25; but the cholera-pestilence was chargeable with much of the excess of the former period.

Coventry improved by more than 2; Bath, Portsmouth, Leeds, and Bristol by nearly 2; Salford and Manchester by about $1\frac{1}{2}$; Leicester, Chester, and Plymouth by about $1\frac{1}{4}$; Macclesfield and Cheltenham by more than 1; London by less than 1.

Many places however, deteriorated: as Preston by fully 2 in the 1,000; Sheffield and Southampton by less than 2; Yarmouth and Gateshead by less than $1\frac{1}{2}$; Blackburn, Nottingham, and Norwich, by more than 1; Bradford and Brighton by less than 1.

I must notice here an inaccurate statement publicly made as to a supposed improvement connected with an outlay on drainage. A gentleman of authority in Bradford, in a paper ("Social Science Transactions, 1862," liv), correcting some unfortunate mistakes made three years before, stated that in Leeds, after the execution of the main sewerage, the death-rate fell from nearly 34 to 28. Now I find that the Leeds death-rate from 1841-50 was only $29\frac{1}{2}$ instead of 34; and that the reduction to 28 was a fall of less than 2 instead of a fall of 6.

Columns 8 and 9.—I now come to two columns, one containing the male death-rate, the other the excess of females living over males living. I have made some remarks on these topics, in my explanation of column 9 in Table A. I have noticed that in certain parishes containing an unusual number of affluent families, the proportion of the sexes is greatly disturbed by the aggregation of female servants; who are generally persons of favourable ages, and of more than average health; and who often return to their homes elsewhere to die. I mentioned several places, of which the most remarkable was Clifton; where at the last census the females of all ages exceeded the males of all ages by 73 per cent. I inferred that the male death-rate was more worthy of attention than the female. In my present Table B, I find that in all England the deaths in 10,000 males exceed the deaths in 10,000 males and females by 8: that in London the male excess is 19; in Clifton 36; in Leamington 31; in Southampton, Brighton, and Bristol 30; in Bath 27; in Edgbaston 24; in Yarmouth and Nottingham 23; in Manchester parish 22; in Liverpool parish 19; in Cheltenham and Leicester 18; in Bolton district and Leeds parish 17; in Birmingham parish and Coventry 15. It will be seen that it is not in manufacturing towns, but in resorts of the affluent, that the male death-rate is most in excess. Of manufacturing towns Nottingham is the highest, and Manchester is the next; both these, and only these, being above London.

It is not pretended that all the excess of females over males consists of domestic servants. Throughout the kingdom there is an average excess of 5 per cent. Then in places like Bath and Clifton, the number of ladies much exceeds that of gentlemen. Thirdly, it is only a part of the domestic servants who return to their native places to die. The excess therefore, of male over female deaths in certain parishes, is not so great as the excess of females living over males living.

Columns 10, 11, and 12.—The next matter I have to enter upon is

the death-rate of young children in towns. In explaining the corresponding columns of my table of counties, I mentioned that social reformers have indulged in exaggerations on the subject: going so far as to say that in many towns half the children born die before attaining their fifth year; and that more than a fourth die in their first year. I believe these errors have arisen from a false mode of calculating the death-rate.

I also deferred the explanation of my mode of calculation, and this I will now give. Two modes are possible. By the first, we ascertain the number of children living each year, and the number who die each year. A town that had 1,000 infants during the year exposed to the risk of death, and in which 150 infants died, would have an infantile death-rate of 150. This mode, to be accurate, would require an annual census. But we have to content ourselves with taking the mean of two decennial censuses.

For ordinary purposes this calculation is accurate enough, but it is not so for minute comparisons. It might happen that the year before the census, the deaths of infants were unusually numerous or unusually few; and in fact, the census of 1851 must have been sensibly affected by the low mortality of the year before, and by the consequently abnormal number of young children living. Again the rate of marriages fluctuates a good deal, according to the prosperous or adverse circumstances of the country: and if an unusually large number of marriages took place immediately after one census, say in 1852, and during a year or two afterwards, there would be an unusually large number of births during the first half of the decennial period; and if from 1855 to 1860 the marriages fell to their average rate, or below it, the young children living at the census of 1861, would be moderate: the augmented births of the first half of the decennial period appearing in the unusual number of children over 5 years old. The mean of the two censuses may therefore be far from accurately expressing the number of young children that have been exposed to the risk of death during the 10 years.

That these two causes, an irregularity in the death rate and an irregularity in the birth-rate, or that some other causes which have escaped me, do produce a sensible effect, is proved by the last census. In vol. ii, p. x, we find the numbers of the population at each age; and we see that of every 1,000 children under 5 years old, the number in the first year of life was 220; in the 2nd year 201; in the 3rd year 198; in the 4th year 191; in the 5th year 190: giving decrements of 19, 3, 7, and 1; decrements far indeed from those which would follow on the average from the ascertained laws of uniform births and deaths.

But since there is so much irregularity in the whole country,

where an excess in one corner is corrected by a default in another, we might safely assume that the various divisions would exhibit still less uniformity. I have not diligently sought for examples: but I find that in Bedfordshire in 1855, the deaths of infants were 463, in the next year, only 384; a difference of 79 or 17 per cent.: that in the same two years, the deaths of children over 1 and under 5 were 363 and 201 respectively; a difference of 162, or 44 per cent. How different would a census have looked as to the young children of Bedfordshire, if taken in 1855 or in 1856!

A similar instance, but in a town, is that of Nottingham; where the deaths of all under 5 were 584 in 1859, and only 372 the next year; a difference of 212, or 36 per cent.: and this irregularity, occurring just before the last census, would vitiate the enumeration as to that town. What happened in Nottingham, may have happened in a score of other towns and parishes.

It appears then that the authoritative mode of calculating the juvenile death-rates is far from perfect, in the absence of an annual census. This diminishes my regret that it is impossible to apply that mode to towns, without further data than we possess. The impossibility is caused by a want of harmony between the register and the census: the one giving the deaths in the *parishes*, the other giving the ages in the *boroughs*; and parishes being, in the absence of further information, incommensurable with boroughs. I know how many children there were in the borough of Liverpool at the last census: I do not know how many children died in the borough of Liverpool from 1851 to 1860.

It follows that another mode of calculation is necessary to ascertain the children's death-rate: this mode is to compare the deaths with the births. In places where the births and deaths were all accurately registered, and no migration went on, this mode would be perfect, and therefore preferable to the one founded on the census. As however, the registration is imperfect, and as young families are sometimes carried from one place to another, the results will be only an approximation to the truth, after every possible correction. This mode however, has one obvious advantage over the other, that it is not disturbed by the variations of births and deaths from year to year: it takes all the registered births and deaths during ten years, and it matters not whether these predominated in the beginning, the middle, or the end of the decennial period. Probably, for particular places, though not for the aggregate of the country, this birth-mode is more accurate than the decennial-census-mode.

At the head of columns 10 and 12, in the line for all England and Wales, I give the death-rate of male infants under 1, as $\frac{161}{1000}$: of male infants under 5 as $\frac{266}{1000}$. In the English life table (Registrar-General, XII, Appendix, 73) it is stated that of 513 male

infants under 1, 82 die the first year and 142 the first five years: making the death-rates respectively $\frac{160}{1000}$ and $\frac{277}{1000}$ against my $\frac{161}{1000}$ and $\frac{266}{1000}$; a difference of 1 in the one case and 11 in the other: the series of years however, not being the same in the two cases.

In the later reports, the epitome of results confounds all the first 5 years of life, a classification I regret. Besides this, the epitome is ambiguous, and to a casual observer quite unintelligible. If, *e.g.*, we turn to Report XX, xix, we find that in the 10 years 1847-56, the deaths of male children under 5 were $\frac{73}{1000}$. An inquirer, comparing this 73 with the 277 deduced from the Registrar's life table, is sorely perplexed. He supposes that the 73 is the average of 5 years of life, and that five times 73, or 365, represent the aggregate deaths; but 365 so much exceeds 277 that the conjecture is dismissed, and the volume is closed.

It is much to be regretted that the register should contain a table so hard to comprehend, and so liable to be misunderstood. I attribute partly to this ambiguous table, and to the reiterated statements of similar results in other parts of the reports, the gross exaggerations of sanitary reformers as to the deaths of young children. It was the duty of the Registrar-General, as I think, to explain the true import of this table, and to guard inquirers against the probable misinterpretation of it. But the language used in the register itself, confirmed the popular misapprehension, and even left it open to doubt, whether the Registrar-General himself did not share it. Thus, at XX, xx, under the head of "*Ages*," we see the words, "The mortality of males under 5 years of age was at the "rate of 73 in 1,000:" which I believe would be generally interpreted to mean that out of 1,000 children born, 73 die in each of the first 5 years, or 365 in all the first 5 years. Again at the foot of the table itself, there is the remark, "Of 100 males living of "the age of 35 and under 45," so many died: meaning that to 100 males *remaining alive* at the end of the year, so many died. The same equivocal notion in another form is to be found in an early report (IV, 17) where there are instructions how to calculate the death-rate; and where the number left alive is confounded with the number exposed to the risk of death. I trust that in future reports the Registrar-General will put inquirers on their guard against this ambiguity.

I have mentioned that in calculating the children's death-rates, a correction was required for the imperfection of the registers. Few bodies, even of the youngest infants, are buried without some public rites: registration follows of course. But many parents, through carelessness or procrastination, omit to register births. I conjectured formerly that this would happen especially in the case of illegitimate births; but two competent district registrars have

assured me that, on the contrary, mothers anxiously register putative fathers, under the fallacious notion that they thus secure evidence of paternity. It is certain however, that the register of births is imperfect: a fact proved by comparing the registers with the census; the excess of births over deaths, the emigration and the immigration, with the decennial augmentation of numbers. We can only conjecture what is the proportion of omissions: but as I am unwilling to understate the children's death-rate, and as the larger the number of births the lower must be the death-rate, I have assumed that the omissions are at the moderate rate of $\frac{1}{40}$. I have made a deduction therefore, of $\frac{1}{40}$ th, from all the figures in columns 10, 11, and 12, in Tables A and B, and of the corresponding columns in Table C.*

I may add that to save time, I took the births as well as the deaths of the 10 years 1851-60; though the infants that died in 1851 must, some of them, have been born in 1850; and though the children over 1 and under 5 must, all of them, have been born before 1851. In an increasing population, the births I have taken would be too numerous, and the death-rate therefore too low. I have consequently consulted my column that marks the rate of increase; and in each place for every 10 per cent. of increase, I have added to my juvenile death-rates, one-third per cent. in the case of infants, and 1 per cent. in the case of all children under 5. The death-rate of children over 1 and under 5 is found by subtracting one of these from the other:—column 10 from column 12.

After all the care I have taken, I know that my figures cannot be regarded as accurate; but I do hope they are sufficiently near the truth to indicate the *comparative* mortality of different places: and even if my juvenile death-rates should prove to be $2\frac{1}{2}$ or 5 per cent. too high or too low, such a divergence would not invalidate my principal inference that the juvenile death-rates have been grossly over-stated by sanitary reformers.

Column 10; results.—I will now mention some comparative results. As to male infants under 1, the highest death-rate is that of Liverpool parish:—240: against 161 of all England and of London. The next highest are Coventry 224; Nottingham 223; Manchester parish 220; Leicester and Preston 212; Norwich 208; Leeds parish and Oldham district 206; Blackburn district and Bradford district 205; Stockport district 204; Wolverhampton

* Since I read this paper, the third volume of the Census has appeared; we learn from it (p. 6) that the excess of unregistered births over unregistered deaths is about 5 per cent. of the births. My argument as to infantile deaths, is all the stronger. I have altered my tables in the appendix by deducting a second one-fortieth from the figures in columns 10, 11, 12, and by calculating column 13 afresh.

district 203 ; Yarmouth 202 ; Hull parish 201 ; Sheffield parish 196 ; Bolton district 194 ; Birmingham parish 189. The favourable cases are those of Portsmouth 147 ; Cheltenham and Chester district 156 ; London and Bath (as all England) 161 ; Derby 172 ; Brighton and Gateshead 174 ; Plymouth 175.

Columns 11 and 14.—Column 11 gives the death-rate of children over 1 and under 5. The most singular fact it reveals, is the large number of such deaths in London, when compared with the moderate mortality of infants: a fact I have already noticed. Whereas the London death-rate of infants under 1 is the same as that of all England, the London death-rate of children over 1 and under 5 is higher than that of all England by 30 per cent. : it is as 137 to 105.

Why should London infants be healthy, and London children past infancy be very unhealthy? Is it the impurity of the air? Surely that would injure infants more than others. It cannot be the want of domestic care, or of medical attendance; for if so, why should the infants escape? I conjecture that it is the want of space, and the consequent confinement of the children to the house or room in which they live: a circumstance not so injurious to infants, comparing them with infants of the same class in society elsewhere, because as they cannot run about, they are everywhere confined to the same room as their mothers.

If indeed, we satisfied ourselves with glancing at the density of the populations, as exhibited in my column 3, we should dismiss this opinion: since London appears there as having twice the space per head that Birmingham has; and three times the space that Liverpool has. But we know that Liverpool and Birmingham in the register, are the town parishes with all the suburbs cut off; while London includes Chelsea, Hampstead, Woolwich, and Sydenham. To make a fair comparison we must go to my Table C, of the different London districts; and then we shall see that Marylebone, the Strand, Whitechapel, the City, and other districts, are at least as much crowded as the parish of Liverpool. Besides this, the streets of these parts of London being narrow, are so filled with horse and foot passengers, that children are almost excluded from them.

Now of late years, nothing has been more clearly proved and more strongly brought into relief, than the necessity of open-air exercise, and the fatal effects of living under cover. Scavengers, we are told, are a healthy race: and the only explanation offered is, that the impurities they inhale are more than neutralized by the open air in which the men work.* The successful treatment of the insane,

* I am aware of the statement that the effluvia from animal ordure, even when fermenting, are generally innocuous.

takes out-door exercise as its basis. Mr. Neison, in his vital statistics, infers from his study of friendly societies, that the superiority of health in rural populations is not caused so much by greater purity of air as by labouring in the open air: since small shopkeepers and other sedentary persons in the country, have no great vital superiority over the same classes in towns; whereas the farm labourers who work out of doors attain, notwithstanding wet and rheumatism, much greater longevity than mechanics who work behind glass windows.

It is no wonder then, that London children, cooped up in part of a house, set maternal care and medical attention at defiance, and die by thousands. Persons who have lived in the great provincial towns, and have driven or ridden through the streets, are familiar with the annoyance caused by the swarms of children who turn the thoroughfares into playgrounds. Occasionally, a poor child is killed or maimed for life: but for one child thus cut off, a hundred probably, have their constitutions strengthened, and their lives saved from disease.

An inference too, may be drawn in favour of the practice of having a separate house for every family, as distinguished from model houses with a family occupying each story. The young children living on the flats above the ground floor, cannot be constantly running out of doors. Model houses, furnished with every other convenience, still lack the playground.

In some towns, the cheap houses are seldom built fronting the street: they are placed in yards and courts. These often look confined, sunless, and dismal; but they have this advantage, that they are safe playgrounds.

While I was writing this paper, there arose a painful discussion as to the sanitary condition of the children of Bethnal Green: and grave allegations were made as to diseases prevailing. As far as I know, no one thought of appealing to the Registrar-General about the juvenile death-rate: a proof I think, that the experience of a quarter of a century has failed to establish Somerset House as the ultimate authority in questions of mortality.

The last line of my Table C gives many particulars of Bethnal Green. We find that the population is dense, but not so dense as in many other parts of London: that the increase of population from 1851-61, and the number of persons in a house, were rather lower than those of all London: that the general death-rate from 1851-60 was considerably lower than that of all London; and that the male death-rate (the true test) was lower than that of all London. Bethnal Green appears to have very few female servants; for its whole excess of females over males is only $3\frac{1}{2}$ per cent., against 5 per cent. in all England and nearly 15 per cent. in all

London. But notwithstanding this, the number of persons in a house is large. Considering therefore the class who live there, and the considerable density of population, the death-rate is rather remarkably low.

The outcry however, was principally about the condition of the children. The leading fact was, that many of the children, failing other play places, ran among the pigstyes and contracted a loathsome skin disease. Consulting my columns 11, 12, and 13, of Table C, I find that the death-rate of infants under 1 year is singularly low; being 5 under that of all England and of all London; while that of Liverpool parish is higher by one-half (240 against 156). But under 1 year old, children cannot run among the pigs. When I come to the ages over 1 and under 5, the evidence of the figures confirms the medical testimony; for the death-rate, instead of being low as in the case of infants, is no less than $\frac{139}{1000}$, which is actually one-third higher than that of all England, though scarcely higher than that of all London, and less by a-third than that of Liverpool parish.

Healthy infancy, and sickly childhood: this combination surely, cannot mean impure air or maternal and medical negligence: it must mean want of space for the open-air sports of children. The great sanitary want of London, as it seems, is not better drainage, or burning of smoke, or better houses, so much as juvenile playgrounds within reach of every house. London does not want the *Crèche* of Paris, which in manufacturing towns, or in Liverpool, might save thousands of infants: it wants a Lisbon earthquake, or a Stuart fire, to give the opportunity of re-construction and extension. It does not want close infant schools, but children's open-air play-places.

But do these columns give similar results in other places? They certainly do in the case of the City of London. Its general death-rate judged by column 8, which includes a fair proportion of deaths in public institutions, is lower than that of all London: its infant death-rate is apparently low, though many infants may be sent elsewhere to die: its children's death-rate (over 1 and under 5) is higher even than that of Bethnal Green, besides the children that may die elsewhere; it is therefore, higher by more than a-third than that of all England. One comparison here is a striking one. In all England, more children by one-half die in the first year than in the four following years together: in the city, more children die in these four years together than in the first year. The column 2, of density of population, appears inconsistent with these results; for the area of the city is greater per head of population, than the area of Bethnal Green; in the proportion of 95 to 72. But besides the space taken up with public buildings, warehouses, and crowded streets, there is

a large deduction to be made for the area of the part of the Thames included within the city boundaries.

Going to other towns, we find that Liverpool parish even exceeds London in its *proportion* of children's mortality to infantile mortality, while its *absolute* juvenile death-rate is far higher. The deaths of infants (under 1 year) out of 1,000 births, are in London 161, in Liverpool 240, or one-half more: the deaths of children (over 1 and under 5) out of 1,000 births, are in London 137, in Liverpool 227, or considerably above one-half more. The proportion of children's deaths to infantile deaths, is in London 85 per cent., in Liverpool 95 per cent.; being for all England only 65 per cent. It may seem unfair to compare the parish of Liverpool, with the whole of London; but if the comparison is made with either the City of London or with Bethnal Green, matters are not much mended. Then comes the question whether this prodigious death-rate of children in Liverpool parish is accompanied by great crowding of the people. I answer that it is so. The area per head in the parish of Liverpool is about one-third of that of London: it appears better than that of Bethnal Green, but the water included in the case of Liverpool makes its land area less than that of Bethnal Green, by about one-fifth (viz. as 58 to 72).

Birmingham parish at first sight points the other way. The density of its population is high, as compared with that of other large towns; though it is less than half that of Liverpool, water being allowed for; nor is it anything near that of the London districts. It is undeniable also, that nearly every family has a separate house; and that the courts and streets furnish plenty of playground for the children. The death-rate of infants is higher than that of Bethnal Green by one-fifth; the death-rate of children (over 1 and under 5) is about the same as that of Bethnal Green: the Birmingham ratio therefore, is much lower, and neither contravenes the law, nor strongly supports it.

In Table B, column 14, I give for each town, the ratio of children's death-rate to infantile death-rate. After Liverpool come Plymouth and Portsmouth, each with a high ratio, though the density of the population is not great, even allowing for the water included in the area. Plymouth and Portsmouth therefore, do contravene the law. It is remarkable that both these are, like Liverpool, seaports.

If the law exists, the ample spaces for playgrounds in rural districts, ought to reduce the ratio far below that of towns. My Table A, of counties, is not one of rural districts only, but takes the counties including the town populations. The ratio in question therefore, ought to be lower than that of towns, but not so much lower as if the rural districts only were given.

I find then, that for every 100 infantile deaths, there are in the three worst counties 75 children's deaths: but thirteen towns have a ratio as high or higher; and instead of merely 75, Liverpool has 95, Plymouth and Portsmouth have 87, and London has 85. Again, three counties have a ratio as low as 44, while the best town on my list has 51. These facts are quite consistent with the supposed law.

Recapitulation of B.

I will now sum up the results of my remarks on Table B, of towns. Comparing the two decennial periods of 1841-50 and 1851-60, there has been a marked decrease in the death-rate of several towns: especially of Hull, which fell from 31 to 25; and of Liverpool, which fell from 39 to 33; making a decrease of 6 in each case. But in both these towns, the high mortality of the earlier period was exceptional; having been caused by frightful visitations of cholera, aggravated in Liverpool by the Irish famine and the consequent Irish immigration of dying persons. Manchester also, has a diminution of $1\frac{1}{2}$ in the 1,000, and London of less than 1: perhaps these two improvements may be permanent. In Birmingham the death-rate was a shade higher in the latter period; though a large sum had been spent in drainage, and many nuisances had been removed. As no cholera was ever known there, the comparison of the two periods is a more satisfactory one than that of London and of Manchester, and still more than that of Hull and of Liverpool. Bradford district was worse during the second period, notwithstanding great efforts at improvement. Some other towns exhibited a slight deterioration, many others a slight improvement.

On the whole it appears that the large outlay on drainage and purification, has done nothing like what it gave promise of twenty years ago. I am therefore, brought to think that causes other than an impure atmosphere, must be assigned for the painfully high death-rate found in great towns. In the case of the men, and partly of the women, one cause is the working under cover instead of in the open air: another doubtless, is the expenditure of high wages in coarse pleasures, unchecked by a knowledge of the laws of health. In many towns the undue employment of mothers causes the deaths of many infants: in all, but especially in London and Liverpool, the want of open-air amusements is answerable for the deaths of many children who had survived infancy. Unfortunately, these mischiefs are incapable of speedy correction. Ten years, and so many millions of outlay, would reform the whole drainage of the kingdom: but a generation will not do much to alter the habits of the nation; and a

century will not, as far as we know, banish glass windows from workshops, and turn cotton-spinning into the open air.

I have contended that for the purpose of comparison, the male mortality is the most important. The adoption of this, and of several other necessary corrections, would modify materially some of the Registrar-General's conclusions.

Of the very large towns, Birmingham stands next to London in recorded healthiness: the two having death-rates of 24 and 26½ respectively. The necessary corrections, I believe, show that Birmingham is the healthier of the two. The difference in the male death-rates is 2·35; but this is for Birmingham parish, compared with the whole of London, including Hampstead and Sydenham. The difference in the male death-rates of London and the borough of Birmingham is less than 1 (·71). Again, London has a far larger proportion of affluent and educated persons than any manufacturing town has. Column 9 of B shows that London has probably three times as many domestic female servants, and therefore at any rate twice as many affluent families. Now by taking in the suburban parts of the borough of Birmingham the death-rate is reduced by more than 1½: by doubling these affluent and educated parts, the death-rate would be reduced a second time by 1½; at once turning the scale against London. Nor is this all. We ought to compare not only class with class, but also age with age. An infant asylum however healthy, will have twenty times as many deaths as a public school of equal numbers. A fast increasing town faintly resembles an infant asylum; London, which increases less fast, faintly resembles a public school. On this principle, according to my calculations of specific mortality eight years ago, a reduction of $\frac{1}{1000}$ should be made in the death-rate of Birmingham as compared with that of London.

The comparison will then stand thus:—

	London.	Birmingham.
Recorded mortality	24	26½
„ of males	25·70	28·05
„ „ in the borough	—	26·41
Deduct—		
1. On supposition that Birmingham had } as many affluent families as London }	1·64	
2. For excess of juvenile population	1·00	
	25·70	23·77

This account, if it be correct, shows that whereas according to the register, Birmingham has a death-rate higher than that of London by 2½, it has really a lower death-rate by 2. An alleged

difference of $4\frac{1}{2}$ in the 1,000, say one-sixth of the whole, is startling enough, but I believe my statements to be correct.

As to juvenile mortality I need scarcely recapitulate what I have said. I have given my reasons for believing that there has been great exaggeration as to the deaths of children in towns; and I have attributed this error in part to the fallacious mode of stating the death-rate from those left alive instead of from all those exposed to the risk of death. I have also given the reasons for my conjecture that it is not impurity of town air so much as want of open air that multiplies the deaths of children.

III.

TABLE C.

There is a striking paper on the subject of mortality, in the "Social Science Transactions for 1860," pp. 632—648. It was written by Dr. Gairdner, an eminent Edinburgh physician; and he arrives at these startling conclusions:—First, that in unhealthy places, not only do infants die faster than in healthy places, just as adults do; but that unhealthy places are more fatal to infants than to adults; (*see* pp. 633—635 and 644): Secondly, that agricultural counties, and particularly the great corn-growing counties, are fatal to infants (pp. 640, 644): Thirdly, that the west-end of London has an unduly high death-rate of infants under 1 year (p. 648). My three tables will enable me I believe, to dispose very shortly of these three propositions.

I. The first is, that as a place increases in mortality, children suffer more than adults. Now the most unhealthy considerable place in England is Liverpool: its male death-rate is $\frac{35.23}{1000}$; something *more* than 50 per cent. worse than that of all England: its male infant death-rate is $\frac{24.6}{1000}$; something *less* than 50 per cent. worse than that of all England: in Liverpool therefore, infants suffer less, and not more, than adults. If the proposition had referred to children over 1 and under 5, Liverpool would, as far as it goes, have been on Dr. Gairdner's side.

But to fully investigate the question, I will refer to column 13 of my two first tables, A and B; and we shall there find the proportion between the male infant death-rate, and the male general death-rate, for every county and principal town: my figures, it will be found, contravene Dr. Gairdner's opinion. For in Table A, the highest proportion of infant death-rate is in Bedfordshire, Cambridgeshire, Lincolnshire, and Northamptonshire; and in none of these is the general death-rate high: in Table B far the highest proportion is in Coventry; then come Norwich, Oldham, and Leicester; but in all four places the general death-rate is decidedly under that of Liverpool, Manchester, Leeds, and Sheffield. I have selected these

cases; but a further inspection of my columns will justify my disbelief in Dr. Gairdner's statement.

II. The second proposition is, that agricultural counties generally, and corn-growing counties especially, have a high infant death-rate: and this, not merely in comparison with the general death-rate of the same counties, but in comparison with the infant death-rate of other counties. The counties in which the agricultural population predominates over the town population, can be readily found by my column 4 of Table A: the most remarkable are North Wales, South Wales (each regarded as one county), Westmoreland, Essex, Herefordshire, Huntingdonshire, Rutlandshire. In these, with one exception, the infant death-rate is either low or very low. The exception is Huntingdonshire, which as we are told, has many persons engaged at home in manufactures, and which therefore, is not really agricultural, but resembles those counties in which towns prevail. Dorsetshire and Somersetshire, also, have a prevalence of agriculture and a low infant death-rate. I conclude that the second proposition, as far as agricultural counties are concerned, is unfounded.

As to the corn-growing counties the case is not so clear, though I have no means of determining exactly which counties come under this denomination. If Lincolnshire, Norfolk, Suffolk, and Cambridgeshire are fixed on, it is true that these except Suffolk have a high infant death-rate, as compared with that of the other agricultural counties I have mentioned. But then they are situated on the eastern side of the island, and have generally a marshy character. It is open to great doubt whether corn-growing has anything to answer for. The probability that climate is a predominating cause is strengthened by the fact, that a low infant death-rate prevails in the five south-western counties, Devon, Somerset, Wilts, Cornwall, and Dorset, to say nothing of the southern Hants. I conclude as to this second of Dr. Gairdner's propositions, that half is untrue and the other half unproved.

III. The third proposition is more startling than the other two: it is (pp. 646—648) that the west-end of London is fatal to infants; fatal both absolutely in the number of deaths, and comparatively with the adult deaths in the same locality. My reply is that Dr. Gairdner's table and mine are quite at variance. We agree pretty nearly, considering that we take a different period, as to Hampstead and Lewisham; but as to St. George's Hanover Square, Marylebone, and other districts, there is a difference of a-fourth or a-fifth; a difference so considerable, that if it had occurred in all the districts, it would have led me to believe that this infant death-rate had been calculated from those left alive instead of from those exposed to the risk of death. Dr. Gairdner's special warning is founded on the

case of St. George's Hanover Square, a district that consists of "Hanover Square, May Fair, and Belgrave." Any close examination of the statement is unsatisfactory: partly because though written in 1860, it is founded on the mortality so far back as 1838-44, the latest period of any detailed calculations by the Registrar-General: partly because the general mortality of the district, fell in the last decennial period from 24 to 21: lastly, because the distribution of hospitals and workhouses over the metropolis, makes minute comparison impossible. All I can say is, that my figures, as they stand, make the male infant death-rate for St. George's Hanover Square, very low; for a town district singularly low; lower by 9 per cent. than that for all England; lower by nearly two-fifths than that of Liverpool; lower than that of any town in my list B except Portsmouth. If indeed, Dr. Gairdner had extended his inquiry to the case of children over 1 and under 5, he would have found that this west-end district has the fatal peculiarity I have discovered in the City and in Bethnal Green, though not in the same degree. It is not against infants, but against young children past infancy, that Hanover Square sins; but the evil is less than that of the other London districts I give, with the exception of Lewisham and Hampstead, which belong to the country rather than the town.

But if the case were worse than it is as regards children past infancy, the inference would be quite different from that to be drawn from a high infant death-rate. In this latter case one might attribute the mischief to the custom of employing wet nurses, and generally to maternal neglect; but as to children past infancy, it seems more probable that the want is rather of gardens and playgrounds in which the children might live out of doors as they would in the country; a want only partially relieved by a morning and afternoon run in the parks.

I have mentioned the complication caused in the London districts by the irregular distribution of workhouses and hospitals. West London is an extreme case. The general death-rate appears to be $\frac{45}{1000}$: it is really only 24, as appears from column 8. The explanation is that it has St. Bartholomew's Hospital within its boundaries, and that the deaths there, added to those in the workhouse, are more than half the deaths of the district. I do not mention this obvious correction as any new discovery. The register furnishes the number of deaths in these institutions; I wish it also distinguished the sexes and ages; as for want of this classification I have been unable to correct my Table C so as to make it of much value.

As regards Dr. Gairdner's statements therefore, I conclude that they are unfounded. It turns out that, if my tables are correct, unhealthy places are not more fatal to infants than to adults: that

the infant death-rate is not high in agricultural counties: that it is not high at the west-end of London. It does seem that that rate is high in some corn-growing counties, but it seems as probable that this is caused by damp and bleak situation as that it is caused by maternal neglect.

Changes Wanted in the Register.

In the course of my remarks, I have pointed out what seem to me defects in the Registrar-General's reports, as well as certain additions which I regard as desirable. I will briefly recapitulate these.

First, the register should be so complete in itself, as to enable any competent person to calculate the death-rates for any parish, town, or borough, and for either sex, without referring to the census. It should also be so arranged as to give every possible facility to casual inquirers; and for this end there should be prefixed notices and instructions, with examples. The form of the register is generally excellent; but it would be advantageous if in all parts a space were left after every five lines of figures. The table given several times, and for example, at XX, xix, requires explanation; readers should be told what it does and what it does not indicate. The first year of life too, should be given separately.

Most of the other changes have reference to towns; but in the counties there is one much wanted: I mean where a border place is carried out of its own county: notice of such an irregularity should be given at the head of each county; the preliminary instructions should mention that such changes in topography occur: and the general index should be extended to sub-districts.

I have shown that the information about towns is very defective: that in the greatest towns the parish stands for the borough, although it may contain less than half the population, as in Bristol; and although such a statement may much exaggerate the death-rate, as in Liverpool from 1841-50. The remedy is not obvious. It is undesirable to increase the difficulties of reference and comparison by disturbing the present form and uniform paging of the register. Probably the best way would be to add to the decennial volume which follows the census, full particulars of every *borough*, with numbers of births, marriages, and deaths, and the rates per 1,000 of each of these.

The index wants large additions. Many towns, Chester and Leamington, *e.g.*, do not appear in it, because they happen not to be separate districts. Every sub-district should be given.

There is another signal deficiency. The report supplies us each

year with the proportion of men and of women who sign the marriage register; but this is given only for each county and for London. This important information as to the state of education in the towns is entirely withheld from us.

In the London register notice is given in each district of the number of persons that die in hospital, workhouse, &c. In "West London" half the deaths are thus accounted for. The same should be done for other towns, that each sub-district may be judged of fairly. Notice should also be given of every case in which any public institution is situated outside a borough; and the number of extruded deaths should be stated, with sex and age.

In London, this notice, H, W, &c., should be repeated in every page where the number of deaths is given. And what is of greater importance, the sexes and ages should be given at pp. 83, 84.

Decennial Volume.

But of all improvements the greatest would be the compilation of a good epitome of results once in 10 years, after the census has been taken.* The present epitome is feeble and lame. An elaborate series of tables was given in 1846, of results for the years 1838-44; *i.e.* for seven years taking the census year 1841 as the pivot. Since that time the Registrar-General's statistical zeal has cooled, and the calculation of results has been left to the irregular efforts of individuals, who are quite unable to accomplish it fully. After the lapse of 18 years it is time that a new official effort should be made.

No doubt, in the decennial epitome, as for example in Vol. XXIII, there is a summary of the registers of the 10 years, but it is a mere summary, unaccompanied with any results. We have the marriages for each of the 10 years, and for all together: we have the population for 1851 and for 1861; from these data any competent person may calculate the marriage-rate. But in my opinion the rate should be added; for each county, each borough or town, each district and sub-district. This column of percentages would be useful for reference by the authorities of any place: it would be highly useful for inquirers who desire to compare place with place, and who find that to make the calculations themselves would require the devotion of their life to this one pursuit. Who has time and patience to calculate the marriage-rates in 21 pages of 50 or 60 lines in each? The same question may be asked as to the births: and as to the deaths, these occupy 100 pages of districts and sub-districts. I ask therefore, that the decennial volume should have the *rates* of births, marriages, and deaths, added to the *absolute numbers*.

I do not ask for an annual column of percentages: for as I have

* I am glad to hear that such a volume is being prepared.

shown in the case of Bradford,* no enumeration is to be relied on but the census; and the assumption of an uniform rate of increase will often prove untrue.

It is especially to be desired that the decennial volume should give the rates for boroughs: not, as in the annual returns, setting down a parish for a borough in one case, and a district for a borough in another.

These rates too should be given in each decennial volume, for 1841-50, for 1851-60, and hereafter for 1861-70: and this for counties, boroughs, and other divisions. An estimate of progress or retrogression would then be easy.

The decennial columns of population should distinguish males and females. At present we have the male deaths and the female deaths; but we can get the male population and the female population only by going to the census.

Then we want a summary for the 10 years of the deaths at different ages. At present, to ascertain the decennial deaths of young children for any county or town, we have to refer to ten reports, extract the figures and add them together. The summary should be accompanied with a percentage column, calculated in either of the two modes I have pointed out. If the census mode is adopted, the calculation should be made from all exposed to the risk of death, and not from those remaining alive. If the birth mode is adopted, the needful corrections should be made, and the principle of the correction should be stated. To me it would be more satisfactory if there were two columns, one for each mode. In this case, the number of births, and the population at each age and for two censuses, should be stated.

The sub-districts should be treated in the same way. Since places like Leamington and Chester are ranked as sub-districts, these minor divisions ought, once in 10 years, to have an opportunity of knowing their condition: and indeed every town or parish however small, is entitled to the same information.

The life tables at present, are for ordinary persons almost inaccessible, with no note to mark the volume and page in which they are buried. The male table is in one place, the female in another. The decennial volume should contain a life table, of males and females, whether a new one or a repetition of the old one. Every annual report should state where the life table is to be found.

A summary of the 10 years' deaths in hospitals and other public

* The Bradford statement was suspected by a disinterested authority. Mr. Winder, Assistant Commissioner, said in 1859, that the Bradford population was estimated by the municipal authorities at 130,000; but that after looking at the calculations, if the authority had not been so high, he should have been inclined to suspect that the estimate was too liberal. (Education Commission 2, 179.)

institutions should be given. The sexes and ages should be distinguished. This should be done for the country generally, and not for London only.

These are the principal additions which have occurred to me as desirable in the decennial report. But many others might probably be found by consulting other students of the registers.

Instructions Wanted.

On first opening one of the reports, the reader is bewildered with the multitude of particulars: he wants a guide to point out his way. A stereotyped preface should be given to each volume, and especially to the decennial volume. The rules for calculation should have examples added.

The following is some of the instruction required. "England" means "England and Wales." The Registrar-General has adopted the districts of the Poor-Law Board, and therefore does not strictly observe the geographical boundaries of counties. For example, Berkshire takes from its neighbours, 30,000 persons. Border places therefore, will often be found in adjoining counties. The index does not contain sub-districts.

The register takes no notice of boroughs, because *the poor-law* has no concern with them: Liverpool and other great towns are represented by parishes of the same names: Bradford and similar towns are concealed in districts of the same names. An ingenious and patient accountant may extract approximate statistics of the boroughs, with the help of the census. An example may be found in the *Statistical Journal* of June, 1864, pp. 188, 189.

Sub-districts.—Some places of considerable importance are ranked as sub-districts, *e.g.*, Leamington is part of the district of Warwick: Chester is merged in Great Boughton, and appears partly as Chester Castle, partly as Chester Cathedral, two minor divisions which do *not* together agree in numbers with those of Chester.

Calculations of rates.—The death-rates in the register, at XX, xix, for example, are calculated by a comparison of deaths with persons left alive: *e.g.*:—if the whole deaths of a particular year are set down as 22, this means that 22 have died to every 1,000 persons left alive. But the number exposed to the risk of death was

$$1,000 + 22 = 1,022; \text{ and the true death-rate was } \frac{22 \times 1,000}{1,022} = 21.53.*$$

In juvenile deaths the irregularity is much greater: *e.g.*:—if 360 children die in the first five years, this means that 360 have died to every 1,000 left alive. But the number exposed to the risk of death was $1,000 + 360 = 1,360$; and the true death-rate was

* This, I believe, is strictly true, only on the supposition of a stationary condition of population and of uniform ages.

$\frac{360 \times 1,000}{1,360} = 265$. That is, out of 1,000 children born, the number who die in the first 5 years is 265, not 360. This ought to be explained in the Register.

The life tables are not given in each volume, nor in the decennial volume: nor is the female table given with the male. There is one life table at IV, 23: another of males at XII, 73, and one of females at XX, 177.

Calculations of percentages require experience and care. The returns of one or two years, and an estimated population for any particular place, may lead to grave errors, as will be seen in the case of Bradford, given in the "Social Science Transactions for 1862," introduction, lii. The returns for the 10 years between one census and another are the only safe data, as the average population for such periods is known. Summaries of the returns for the 10 years are partly furnished: other summaries must be obtained by consulting the separate volumes for each year. For 1851 to 1861 the summaries given will be found in Vol. XXIII, pp. 174—327:—viz., the summary of marriages at districts at p. 174; of births in districts at p. 196; of births in sub-districts at p. 240; of deaths in districts at p. 218; of deaths in sub-districts at p. 240. No summary is given of marriages in sub-districts. This can be obtained by consulting the volumes for each year: and the same is true of the deaths at different ages.

The population of each place for 1851 and 1861, according to the conventional boundaries assigned by the Poor-Law Board, will be found in the summary at XXIII, 174, &c.; the acreage at p. 2, &c.; the male and female population are not given separately, but will be found in the census.

In making calculations as to the London districts, the hospitals and other public institutions must be taken into account. They are irregularly distributed; the City, *e.g.*, having none. All the districts that have such institutions are marked H, W, &c., in the 10 years' summary, but not in the annual reports. Each annual report contains, at pp. 83, 84, the number of deaths in these institutions during the year: but no 10 years' summary is given. Outside of London, no such institutions are marked in the districts; the sub-districts however, have the workhouses marked, but no other institutions.

No extensive calculations of percentages are added to any of the late reports; but some important ones deduced from the early reports, will be found in Vol. IX.

Forms of Calculation.

To find the death-rate of any place.—Add together the population of 1851 and 1861 (not according to the census, but according to

Registrar-General, XXIII, 218, &c.): half the total is the average population. Find the 10 years' deaths (Registrar-General, XXIII, 218, &c., for districts, 240, &c., for sub-districts): multiply by 100 and divide by the average population.

Example.—Bedfordshire, p. 218.

$$\text{Average population, } \frac{129,805 + 140,479}{2} = 135,142$$

Number of deaths 28,170.

$$\text{Death-rate during the 10 years, } \frac{28,170 \times 100}{135,142} = 20.85.*$$

To find the male death-rate.—Refer to the Census I, 194, &c., for population of 1851 and 1861: half the total of the two will be the average. The summary of male deaths in districts is given by the Registrar-General, XXIII, 218: no summary in sub-districts is given, but it can be collected from the separate volumes. Multiply the 10 years' deaths by 100, and divide by the average population.

To find the juvenile death-rate of any place.—The number living at any age must be found in the census. In boroughs the numbers are given for the whole borough: and as the Registrar-General knows nothing of boroughs as such, any calculation for boroughs by this mode is impossible. For places which are not boroughs one caution is necessary. To ascertain how many children die out of 1,000 who are born, the calculation must be made by a comparison of all who die and all who have been exposed to the risk of death. *E.g.*: if the census gives 1,000 as the number of children under 5, living in a certain place; and if the annual deaths under 5 have been 350, the number who have been exposed to the risk of death is

$$1,000 + 350 = 1,350. \text{ The death-rate will be } \frac{350 \times 1,000}{1,350} = 259.$$

Another mode is to compare the *births* with the deaths; making an allowance of 5 per cent. for excess of unregistered births over unregistered deaths. The deaths will be found in each report p. 98, &c.: the births for the 10 years are summarised in XXIII, 196, &c., and 240, &c.

Example.—If a place has annually 1,350 registered births, and 350 registered deaths annually under 5 years, the death-rate will be $\frac{350 \times 1,000}{1,350} = 259$, subject to a deduction of 5 per cent. for excess of unregistered births over unregistered deaths.

These are the instructions which have occurred to me as examples. Others should be added as to marriages and births. By consulting different inquirers the list might be made complete.

* My Table A gives 20.78 and is taken from Registrar-General, XXIII, xiv. I explained before that the Registrar's averages are slightly altered by taking the intercalated years into his account.

I have now finished the task I have undertaken, of first, explaining my three tables, column by column; and then briefly collecting my practical inferences under a few heads.

NOTE.—While was I revising the proof of this article, I became acquainted with a House of Commons Return, “Deaths,” ordered 24th July, 1863. This paper has enabled me to test the accuracy of some of the figures in my appendix, as to which I have expressed fears that errors would be found among them. My column 7 of Table B, and my column 6 of Table C, contain a set of figures, which appear in the Parliamentary Return. I am glad to find that I am acquitted of any error of even slight importance.

The column, “At less than 1 year of age—All Causes,”—throws light on the most difficult question in my paper. The total infantile deaths, male and female, are set down as $\frac{177}{1000}$. This means that there were 177 deaths in proportion 1,000 infants *left alive*: I contend that it would be far more perspicuous to say that there were 177 deaths out of 1,177 infants exposed to the risk of death; and that therefore the true infantile death-rate was $\frac{150}{1000}$.

My infantile death-rate, at A, column 10, line 1, is 161; but this is for *boys* only: for boys and girls my rate would be 147, *i.e.*, 3 less than the 150 in the Parliamentary paper.

Considering that my calculation is made from births, while the other is made from the enumeration of two censuses, the difference of $\frac{3}{150}$, or 2 per cent., seems very small. This confirms me in my opinion that my proposed amendment, though not theoretically true, leads to a correct result in the present condition of the register.

APPENDIX.

TABLE A.—*Vital Statistics of each County in England*

1	2		3	4	5	6	7
Population, in Thousands, 1861, by the Census.	Population, in Thousands, 1861, by the Registrar-General.	Registration—Counties, &c.	Number of Acres to each Person.	Rural Population in Proportion to Town Population.	Increase of Population per Cent. in 10 Years by Census.	Number of Persons in a House.	Death-rate, 1841-50, to 1,000 of Population, Registrar-General, 13, 194.
20,066	20,066	England and Wales	1·86	—	11·93	5·37	22·28
112	2,804	London	·0279	—	18·70	7·8	24·55
135	140	Bedfordshire	2·18	2·10	9·	4·93	21·65
176	206	Berkshire	2·56	1·57	4·	4·93	20·11
168	147	Buckinghamshire	2·78	1·56	3·	4·81	21·43
176	182	Cambridgeshire	2·98	2·18	{ minus 5· }	4·68	22·54
505	470	Cheshire	1·39	·76	11·	5·16	23·14
369	365	Cornwall	2·37	2·68	4·	5·06	18·97
205	205	Cumberland	4·87	1·30	5·	5·06	21·10
339	294	Derby	1·94	2·21	15·	4·90	21·24
584	589	Devonshire	2·83	1·11	3·	5·76	19·69
189	182	Dorsetshire	3·35	2·03	2·	5·01	19·56
509	542	Durham	1·22	1·07	30·	6·	22·41
405	380	Essex	2·62	3·48	10·	4·98	20·19
486	444	Gloucestershire	1·66	·83	6·	5·23	21·96
482	457	Hants	2·22	1·09	19·	5·57	20·23
124	108	Herefordshire	4·32	3·38	7·	4·89	20·82
173	177	Herts	2·25	2·89	4·	4·97	20·18
64	59	Huntingdonshire	3·57	3·34	·1	4·69	21·85
—	545	Kent (<i>extra metropolitan</i>)	1·4	·78	19·	5·81	20·58
2,429	2,465	Lancashire	·5	·44	20·	5·54	27·52
237	244	Leicestershire	2·16	1·37	3·	4·58	21·69
412	404	Lincolnshire	4·31	2·23	1·	4·76	19·65
—	187	{ Middlesex (<i>extra metro-</i> <i>politan</i>)	·08	·19	17·	7·90	19·44
175	197	Monmouth	2·11	2·32	11·	5·28	22·64
435	427	Norfolk	3·12	2·34	{ minus 2· }	4·50	20·97
228	231	Northamptonshire	2·77	2·38	7·	4·69	21·51
343	343	Northumberland	3·64	·90	13·	6·17	21·72
294	324	Nottinghamshire	1·79	·93	9·	4·70	20·83
171	171	Oxon	2·77	1·79	·3	4·74	21·38

APPENDIX.

and Wales in the Two Decades, 1841-50 and 1851-60.

8	9	10	11	12	13	14	15	16
Death-rate, 1851-60, Registrar- General, 23, xiv.	Male Death-rate, 1851-60, Registrar- General, 23, 218, and Census, 194.	Male Death-rate under 1 Year to 1,000 Births, Registrar- General, 14 to 23, and 23, 196.	Male Death-rate from 1 to under 5 Years. (Total of 4 Years.)	Male Death-rate from Birth to under 5 Years. (Total of 5 Years.)	Proportion of Male Death-rate under 1 to General Male Death-rate.	Number of Male Deaths in the 4 Years, over 1 and under 5, in Proportion to 100 Male Deaths under 1.	Rate of Farm Wages, 1860, <i>Statistical Journal</i> , xxiv, 328.	Number of Women per Cent. who sign Names to Marriage Registers, Registrar- General, xxiii, vi.
22·24	23·05	161	105	266	7·00	65	s. d. —	63·8
23·77	25·70	161	137	298	6·26	85	—	81·4
20·78	21·30	172	85	257	8·08	49	10 3	54·8
20·24	20·53	135	78	213	6·57	58	10 8	75·8
20·82	20·65	154	77	231	7·45	50	No return	65·0
20·55	21·33	172	86	258	8·06	50	10 —	65·5
22·49	23·28	170	101	271	7·30	60	11 8	54·9
20·44	21·43	139	89	228	6·49	64	10 6	56·9
20·84	21·45	139	87	226	6·48	63	15 —	66·4
21·71	21·69	156	88	244	7·19	56	12 —	64·5
19·77	20·74	130	95	225	6·27	73	9 2	72·6
19·35	19·71	132	79	211	6·69	60	9 4	71·0
23·30	23·29	164	111	275	7·04	68	14 3	57·8
20·18	20·44	145	84	229	7·09	58	11 3	69·1
21·11	22·13	149	94	243	6·73	64	9 5	73·2
20·26	21·01	130	93	223	6·19	71	12 —	76·1
20·28	20·67	137	67	204	6·63	49	9 —	71·1
18·93	19·43	139	73	212	7·15	52	10 —	66·6
19·69	20·56	164	74	238	7·98	54	10 9	67·9
20·11	20·75	141	88	229	6·79	62	12 —	75·9
26·30	27·44	192	144	336	6·99	75	12 7	45·9
21·86	22·43	175	93	268	7·80	53	13 6	66·3
19·47	19·75	159	70	229	8·05	44	13 —	72·3
20·67	21·76	141	92	233	6·48	65	No return	80·1
22·58	23·36	151	113	264	6·46	75	11 8	48·9
21·20	21·94	174	76	250	7·93	44	10 7	70·0
21·26	20·99	169	81	250	8·05	48	11 —	69·2
22·09	22·71	148	104	252	6·52	70	14 —	69·4
22·49	22·81	180	95	275	7·89	52	12 9	61·4
20·65	20·97	145	80	225	6·91	55	No return	71·7

TABLE A.—*Vital Statistics of each County in England*

1	2		3	4	5	6	7
Population, in Thousands, 1861, by the Census.	Population, in Thousands, 1861, by the Registrar-General.	Registration—Counties, &c.	Number of Acres to each Person.	Rural Population in Proportion to Town Population.	Increase of Population per Cent. in 10 Years by Census.	Number of Persons in a House.	Death-rate, 1841-50, to 1,000 of Population, Registrar-General, 13, 194.
22	23	Rutlandshire	4.36	3.26 {	minus 5.	} 4.71	19.34
241	260	Salop	3.43	1.61	5.	4.98	20.86
445	463	Somersetshire	2.35	2.62	.2	5.09	20.28
747	770	Staffordshire .....	.97	.72	23.	5.08	23.86
337	335	Suffolk	2.81	2.33 {	minus .04	} 4.62	19.93
—	273 {	Surrey (<i>extra metropo-</i> <i>litan</i>) .....	.58	.48	22.	6.38	18.07
364	367	Sussex	2.58	.79	8.	5.55	18.29
562	561	Warwickshire	1.	.43	18.	4.83	23.25
61	61	Westmoreland	7.98	4.06	4.	5.16	19.31
249	236	Wiltshire	3.47	1.09 {	minus 2.	} 4.70	20.69
307	295	Worcestershire	1.54	.98	11.	4.87	20.95
240	} 275 {	Yorkshire, East Riding	3.19	} .91 {	9.	4.89	} 23.54
40		„ City .....	.07		11.	4.90	
245		„ North Riding	5.5		14.	4.88	
1,508		„ West „	1.13		14.	4.65	
427	416	North Wales.....	4.70	8.11	3.	4.69	19.54
685	700	South „	4.	4.52	6.5	5.07	20.48

Note.—Columns 3—6 are

TABLE B.—*Vital Statistics of some of the Principal Cities and*

1	2		3	4	5	6
Population, in Thousands, 1861, Municipal, by the Census, I, xxi.	Population, in Thousands, 1861, by the Registrar-General, 23, 222, &c.	Districts, Towns, &c.	Number of Acres to 100 Persons according to Registrar-General, 23, 6, &c.	Increase of Population per Cent. in 10 Years, Registrar-General, 23, 196.	Number of Persons in a House by the Census.	Death-rate, Male and Female, 1841-50, to 1,000 of Population, Registrar-General, 13, 194.
20,066	20,066	England and Wales.....	186	11.93	5.37	22.28
112	2,804	London	2.79	18.7	7.80	24.55
53	68	Bath	44.37	{ minus 2.16 }	6.55	24.02
—	213	Birmingham parish	1.25	22.23	5.01	26.16
296	—	„ borough	—	—	—	—
13	16	Edgbaston.....	—	—	—	—
—	—	„ parish	—	—	—	—

and Wales in the Two Decades, 1841-50 and 1851-60—Contd.

8	9	10	11	12	13	14	15	16
Death-rate, 1851-60, Registrar- General, 23, xiv.	Male Death-rate 1851-60, Registrar- General, 23, 218, and Census, 194.	Male Death-rate under 1 Year to 1,000 Births, Registrar- General, 14 to 23, and 23, 196.	Male Death-rate from 1 to under 5 Years (Total of 4 Years.)	Male Death-rate from Birth to under 5 Years. (Total of 5 Years.)	Proportion of Male Death-rate under 1 to General Male Death-rate.	Number of Male Deaths in the 4 Years, over 1 and under 5, in Proportion to 100 Male Deaths under 1.	Rate of Farm Wages, 1860, <i>Statistical Journal</i> , xxiv, 328.	Number of Women per Cent. who sign Names to Marriage Registers, Registrar- General, xxiii, vi.
18·	17·87	126	56	182	7·05	44	s. d. No return	78·8
20·10	20·49	142	77	219	6·93	54	10 —	59·9
19·78	20·52	135	77	212	6·58	57	10 —	69·4
24·85	25·31	182	126	308	7·19	69	12 6	48·3
20·23	20·43	147	69	216	7·19	47	10 7	69·7
18·02	18·19	126	84	210	6·93	67	12 9	82·0
18·95	19·69	130	79	209	6·60	61	11 8	81·6
23·28	24·06	176	113	289	7·31	64	10 9	64·0
18·31	18·55	104	64	168	5·61	61	14 3	77·7
20·66	20·79	135	80	215	6·49	60	9 6	69·8
20·36	21·02	157	88	245	7·47	56	10 —	63·6
22·18	23·04	181	91	272	7·86	50	13 6	71·1
19·47	19·56	136	66	202	6·95	49	13 6	74·3
23·89	24·55	177	111	287	7·21	63	13 6	53·4
20·18	20·44	131	80	211	6·41	61	} 11 2 {	46·1
21·69	22·48	137	103	240	6·09	75		42·1

taken from the Census.

Towns of England in the Two Decades, 1841-50 and 1851-60.

7	8	9	10	11	12	13	14
Death-rate, Male and Female, 1851-60, to 1,000 of Population, Registrar- General, 23, 220.	Male Death-rate, 1851-60, to 1,000 of Population, Registrar- General, 23, 218, and Census, 194.	Excess of Females over Males per Cent., 1861, Census, 192.	Male Death-rate under 1 Year to 1,000 Births, Registrar- General, xiv to xxiii, and xxiii, 196.	Male Death-rate over 1 and under 5 Years (Total of Four Years).	Male Death-rate from Birth to under 5 Years. (Five Years.)	Proportion of Male Death-rate under 1 to General Male Death-rate.	Number of Male Deaths in the 4 Years over 1 and under 5, in Proportion to 100 Male Deaths under 1.
22·24	23·05	5·25	161	105	266	7·00	65
23·77	25·70	14·48	161	137	298	6·26	85
22·03	24·78	53·30	161	95	255	6·50	59
26·51	28·05	4·65	189	140	329	6·74	74
25·20	26·41	5·61	—	—	—	—	—
14·90	17·33	44·5	—	—	—	—	—
—	—	57·20	—	—	—	—	—

TABLE B.—*Vital Statistics of some of the Principal Cities and*

1	2		3	4	5	6
Population, in Thousands, 1861, Municipal, by the Census, I, xxi.	Population in Thousands 1861, by the Registrar- General, 23, 222, &c.	Districts, Towns, &c.	Number of Acres to 100 Persons, according to Registrar- General, 23, 6, &c.	Increase of Population per Cent. in 10 Years, Registrar- General, 23, 196.	Number of Persons in a House by the Census.	Death-rate, Male and Female, 1841-50, to 1,000 of Population, Registrar- General, 13, 194.
63	120	Blackburn district	36.32	32.18	5.58	25.18
70	130	Bolton „	33.69	13.56	5.36	26.79
106	196	Bradford „	20.53	7.97	4.72	24.88
78	78	Brighton	2.99	18.49	6.24	21.36
—	66	Bristol parish	2.79	.47	6.53	28.60
154	—	„ borough	—	—	—	—
—	95	Clifton	—	—	—	—
40	50	Cheltenham district	49.96	12.61	5.66	20.12
31	59	Chester „	183.85	10.49	5.21	23.49
41	42	Coventry	13.18	13.14	4.55	26.85
43	51	Derby	5.82	16.86	4.80	23.98
34	59	Gateshead	43.07	23.56	7.65	24.53
98	57	Hull	3.21	12.26	5.00	30.63
18	19	Leamington	15.45	11.81	5.51	19.19
207	118	Leeds	1.79	16.11	4.64	29.56
68	68	Leicester	5.81	12.44	4.66	26.75
444	270	Liverpool parish* .....	.82	4.07	7.28	39.22
—	—	„ and West Derby	—	—	6.75	34.95
36	62	Macclesfield	132.54	{ minus 2.82 }	4.33	25.96
339	244	Manchester	5.18	6.81	5.69	33.08
—	—	„ and Chorlton	—	—	5.51	30.69
102	105	Salford	4.58	20.35	5.36	27.65
109	111	Newcastle-on-Tyne	6.40	24.46	7.80	26.83
75	74	Norwich	5.81	9.16	4.38	23.90
75	76	Nottingham	2.47	29.69	4.84	25.51
72	111	Oldham	15.16	28.22	5.24	25.80
63	63	Plymouth	2.61	19.87	10.29	24.82
95	95	Portsmouth	8.23	31.47	6.00	24.72
83	111	Preston	61.56	14.48	5.51	25.12
185	128	Sheffield	8.21	24.44	4.87	26.65
47	43	Southampton	6.06	27.32	6.00	22.82
55	94	Stockport	32.55	4.6	4.86	25.28
78	91	Sunderland	13.17	28.52	7.80	24.33
61	127	Wolverhampton	42.47	21.83	5.17	27.24
35	30	Yarmouth	4.98	12.87	4.47	23.33
40	60	York	139.14	10.39	4.91	23.62

* Liverpool parish extends over part of the Mersey. Its whole area is 2,200 acres, .82 should be

Towns of England in the Two Decades, 1841-50 and 1851-60—Contd.

7	8	9	10	11	12	13	14
Death-rate, Male and Female, 1851-60, to 1,000 of Population, Registrar-General, 23, 220.	Male Death-rate, 1851-60, to 1,000 of Population, Registrar-General, 23, 218, and Census, 194.	Excess of Females over Males per Cent., 1861, Census, 192.	Male Death-rate under 1 Year to 1,000 Births, Registrar-General, xiv to xxiii, and xxiii, 196.	Male Death-rate over 1 and under 5 Years. (Total of Four Years.)	Male Death-rate from Birth to under 5 Years. (Five Years.)	Proportion of Male Death-rate under 1 to General Male Death-rate.	Number of Male Deaths in the 4 Years over 1 and under 5, in proportion to 100 Male Deaths under 1.
26·34	27·30	6·99	205	136	341	7·51	67
26·88	28·60	7·42	194	133	327	6·78	68
25·69	26·89	15·59	205	126	331	7·63	61
22·00	24·99	34·23	174	111	285	6·96	64
26·71	29·68	16·00	177	136	313	5·96	76
—	—	23·18	—	—	—	—	—
17·50	21·15	73·50	—	—	—	—	—
19·00	20·78	38·20	156	83	239	7·51	53
22·21	23·27	4·63	156	98	254	6·70	63
25·27	26·73	11·52	224	113	337	8·38	50
24·08	25·33	11·60	172	111	283	6·79	65
25·82	26·23 {	minus 2·50 }	174	128	302	6·63	74
24·69	26·06	6·35	201	131	332	7·71	65
19·00	22·10	43·20	—	—	—	—	—
27·72	29·43	6·89	206	146	352	7·00	71
25·41	27·19	14·20	212	122	334	7·79	58
33·29	35·23	3·05	240	227	467	6·81	95
—	—	5·80	—	—	—	—	—
24·83	25·43	10·58	191	102	293	7·51	54
31·48	33·65	10·96	220	168	388	6·54	76
28·60	—	11·53	205	156	361	—	76
26·00	27·66	12·42	198	145	343	7·16	73
27·37	28·61	1·66	193	145	338	6·75	75
24·91	26·70	20·71	208	107	315	7·79	51
26·66	28·95	21·89	223	130	353	7·70	58
25·37	26·43	3·72	206	128	334	7·79	62
23·62	25·36	15·78	175	152	327	6·90	87
22·78	23·39	3·77	147	129	276	6·28	87
27·17	28·73	12·26	212	139	351	7·38	66
28·45	29·51	·97	196	151	347	6·64	77
24·45	27·49	12·50	171	119	290	6·22	70
25·62	26·87	13·99	204	114	318	7·59	56
24·89	25·98	5·46	170	132	302	6·54	78
27·61	28·45 {	minus 2·93 }	203	153	356	7·14	75
24·73	27·03	25·39	202	113	315	7·47	56
24·01	25·15	8·05	178	101	280	7·08	57

of which 1,560 acres are land, and 660 acres are water (Census 1861, I, 595). Therefore reduced to '58.

TABLE C.—*Vital Statistics of the Metropolis, and of its Principal*

1		2	3	4	5
Population, in Thousands, 1861, Registrar- General, 23, 6.	London and some of its Districts.	Acres to each 100 Persons, Registrar- General, 23, 6.	Increase per Cent. in 10 Years, Census, I, 196.	Number in a House, Census, I, 196.	Death-rate, Male and Female, 1841-50, <i>Including</i> Hospitals, &c. Registrar- General, XIII, 198.
20,066	England and Wales.....	186	11·93	5·37	22·28
2,804	London	2·79	18·70	7·80	24·55
66	Lewisham (W. W.)	26·04	88·77	6·77	16·51
19	Hampstead (W.)	11·79	59·40	7·20	17·27
88	St. George's, Hanover Square (H.)	1·32	19·86	8·41	23·61
35	St. James, Westminster (W.)	·46	{ minus 2·97 }	10·60	20·55
162	Marylebone (H. H.)	·93	2·53	9·88	23·89
23	{ St. Martin-in-the-Fields (H. and W.)	1·34	{ minus 7·92 }	10·13	25·77
43	Strand (H.)	·40	{ minus 3·24 }	11·39	23·27
129	Shoreditch (W. W.)	·50	18·40	7·58	26·65
58	Bermondsey	1·18	21·25	7·10	26·79
49	St. George's-in-the-East (W.)	·50	1·07	7·92	27·70
79	Whitechapel (H. H.)	·51	{ minus ·99 }	9·11	31·20
56	{ St. George's, Southwark (W.) and L. A.)	·51	7·11	7·67	28·07
54	St. Giles's (H.)	·45	{ minus ·25 }	11·53	25·18
27	West London (H.)	·51	{ minus 3·78 }	10·52	44·03
46	City	·95	{ minus 18·55 }	7·16	18·95
—	{ Bethnal Green (H., W., and L. A.)	·72	16·53	7·13	24·19

Note.—(W.) means that there is a workhouse in this district;

Registration Districts in the Two Decades, 1841-50 and 1851-60.

6	7	8	9	10	11	12	13
Death-rate, Male and Female, 1851-60, Including Hospitals, &c. Registrar-General, xxiii, 220.	Death-rate, Male and Female, 1851-60, Excluding Hospitals, &c. Registrar-General, xxiii, 220, and 83-4.	Death-rate, Male and Female, 1851-60, adding One-sixth to Column 7 for Deaths in Public Institutions.	Male Death-rate, including Hospitals, 1851-60, Registrar-General, xxiii, 222, and Census, I, 196.	Excess of Females over Males, 1861, per Cent., Census, I, 196.	Male Death-rate, 1851-60, under 1 to 1,000 Births, Registrar-General, xiv to xxiii, 102, and xxiii, 196.	Male Death-rate over 1 and under 5 Years. (Total of Four Years.)	Male Death-rate from Birth to under 5 Years.
22·24	—	—	23·05	5·25	161	105	266
23·77	—	—	25·70	14·48	161	137	298
16·75	16·01	18·67	17·97	9·96	135	104	239
16·00	14·78	17·24	19·15	60·58	134	116	250
20·85	16·15	18·84	25·25	33·50	147	122	269
21·49	18·28	21·33	22·23	12·10	166	147	313
23·71	19·37	22·60	26·22	30·00	176	136	302
25·97	18·60	21·70	27·95	7·15	170	157	327
23·67	20·09	23·44	25·87	7·05	164	170	334
24·23	20·69	24·14	25·26	8·66	157	134	291
24·84	24·84	28·98	25·32	3·39	161	159	320
27·10	23·57	27·50	27·84	6·78	174	159	333
30·41	22·68	26·46	32·41	{ minus } 1·82	191	175	366
25·83	22·46	26·20	26·61	5·46	188	153	341
26·68	21·43	25·00	28·75	12·47	187	163	350
44·98	20·87	24·35	51·38	2·47	188	248	436
17·67	17·67	20·62	19·10	10·34	140	144	284
22·26	19·63	22·90	22·98	3·51	156	139	295

.) that there is a hospital ; (L. A.) that there is a lunatic asylum.

A FEW STATISTICS relating to SHIPPING CASUALTIES. By
HENRY JEULA, Member of Lloyd's, F.R.G.S., F.S.S.

[Read before the Statistical Society, 15th March, 1864.]

THE value of statistical information being now so generally admitted, it has frequently caused me considerable surprise that the by no means unimportant subject of "*Shipping Casualties*" should have been, to so large an extent, excluded from its benefits; and I now cheerfully yield to the request of the Council of our Society, that I would prepare a Paper upon this topic; but in placing it before you, permit me to crave your kind consideration for my effort rather to open up the field of inquiry for other and abler hands to till than myself to develop its treasures.

In the comparative tables which I have collated from information previously given in "*Lloyd's List*," and which have appeared in successive numbers of our *Journal*, it has been my desire to direct attention to the theme, in the hope that other minds might perhaps become interested in it, and that the result would be a regular system of statistics applied to shipping disasters, organized for the purpose of affording data generally useful to all engaged in maritime enterprise, whether as owners, masters, freighters, or insurers.

In furtherance of this object, you will, I trust, grant me your indulgence while I try to place before you—as briefly and succinctly as I can—the results of some of my investigations.

Of necessity my paper of to-night can afford but very meagre information upon so large a subject, as before it could be thoroughly exhibited to you, much more extended inquiries than my time will permit must be made, ranging over both British and Foreign ships, as well steamers as sailing vessels; but when we remember that the shipping belonging to the *United Kingdom* reached, at the end of 1862,* the amount of 28,440 vessels, of 4,934,400 tons, navigated by 228,139 men and boys; and the shipping belonging to the *British possessions*, 10,987 vessels of 1,106,958 tons, navigated by 76,032 men and boys, we must, I think, admit that any effort, however humble, to draw attention to the disasters constantly occurring to so pre-eminent a branch of our national commerce cannot be superfluous or out of place.

From the tables mentioned above, it appears that, for the six

* *Vide* "Times."

years from 1854 to 1859 inclusive, the *average annual total* reported in "Lloyd's Register of Losses" was 334·134.

The *percentage* of this total, separated under the following seven general divisions, was as under:—

Percentage of Annual Total.

Wrecked.	Sunk.	Abandoned.	Missing.	Stranded.	Condemned.	Touched the Ground, sustaining Trifling Damage.
24·16	10·44	7·1	1·14	54·46	2·41	·29

The *six years' average monthly totals* were as follow:—

		Per Cent. of Annual Average.
January	412·33	or 12·34
February	290·33	„ 8·69
March	301·17	„ 9·01
April	246·33	„ 7·37
May	198·67	„ 5·95
June	175·83	„ 5·26
July	170·5	„ 5·1
August	182·0	„ 5·45
September	222·0	„ 6·64
October	362·17	„ 10·84
November	381·17	„ 11·41
December	398·83	„ 11·94

The *percentages* of these *monthly totals*, divided under the seven heads already mentioned, were as under:—

Percentages of Monthly Totals.

Months.	Wrecked.	Sunk.	Abandoned.	Missing.	Stranded.	Condemned.	Touched the Ground, sustaining Trifling Damage.
January	26·03	8·41	6·75	1·41	54·85	2·02	·53
February	23·77	8·72	8·44	1·38	54·3	2·76	·63
March	22·58	8·69	7·64	1·72	56·27	2·77	·33
April	21·18	10·08	7·91	1·49	57·04	2·23	·07
May	19·21	12·08	7·64	1·51	56·37	2·94	·25
June	21·9	10·71	5·97	2·66	55·73	2·75	·28
July	22·68	10·16	4·99	1·27	56·5	4·01	·39
August	23·35	14·38	7·05	1·01	51·01	3·02	·18
September	21·01	12·39	4·88	·6	58·71	2·18	·23
October	28·25	11·96	6·35	·42	50·99	1·98	·05
November	27·33	11·24	8·22	·22	50·93	1·75	·31
December	24·99	9·53	7·56	1·04	54·58	2·13	·17

The quarterly averages for the same six years were:—

			Per Cent. of Annual Average.
March quarter	1003·83	or	30·04
June „	620·83	„	18·58
September „	574·5	„	17·2
December „	1142·17	„	34·18

And the percentages of the seven divisions, as follow:—

Percentage of Quarterly Average.

Seasons.	Wrecked.	Sunk.	Abandoned.	Missing.	Stranded.	Con- demned.	Touched the Ground, sustaining Trifling Damage.
March quarter	24·34	8·58	7·5	1·49	55·13	2·46	·5
June „	20·75	10·9	7·28	1·82	56·46	2·6	·19
September quarter	22·25	12·36	5·6	·93	55·61	2·99	·26
December „	26·81	10·87	7·4	·57	52·23	1·95	·17

The average for the—

		Per Cent. of Annual Average.
First half-year was	1624·67	or 48·63
Second „	1716·67	„ 51·37

Divided as before, the percentages were:—

Seasons.	Wrecked.	Sunk.	Abandoned.	Missing.	Stranded.	Con- demned.	Touched the Ground, sustaining Trifling Damage.
First half-year	22·96	9·47	7·42	1·62	55·63	2·51	·38
Second „	25·28	11·37	6·8	·69	53·36	2·3	·2

The foregoing figures are gleanings from maritime disasters occurring in various parts of the world, and reported upon the “Loss Register” during the interval named. Let us now turn to the more circumscribed but very dangerous area of our own channels and coasts.

From the returns made to the “Lords of the Committee of Privy “Council for Trade,” of the wrecks and casualties reported as having occurred on or near the coasts of the United Kingdom it appears that the *annual average for seven years*, from 1855 to 1861 inclusive,

was 1270·86; but in 1862 the number rose to 1,488, equivalent to an increase of 17·09 per cent. upon the previous septennial average.

The *monthly averages* for the *six years* from 1856 to 1861 inclusive were as follow :—

		Per Cent. of Annual Average.
January	168·67	or 13·05
February	160·83	„ 12·44
March	118·67	„ 9·18
April	85·17	„ 6·59
May	65·5	„ 5·07
June	38·67	„ 2·99
July	42·33	„ 3·28
August	59·67	„ 4·62
September	87·0	„ 6·73
October	161·83	„ 12·52
November	171·17	„ 13·24
December	133·0	„ 10·29

The *monthly numbers* for 1862 were :—

Months.		Per Cent. of Annual Total.	Upon Previous Average of Six Years.	
			Increase per Cent.	Decrease per Cent.
January	186 or	12·50	—	·55
February	87 „	5·86	—	6·58
March	142 „	9·54	·36	—
April	69 „	4·64	—	1·95
May	65 „	4·37	—	·7
June	58 „	3·87	·88	—
July	76 „	5·11	1·83	—
August	52 „	3·5	—	1·12
September	54 „	3·63	—	3·1
October	283 „	19·02	6·5	—
November	140 „	9·41	—	3·83
December	276 „	18·55	8·26	—
Casualties happening } to 1,827 vessels }		1,488		

The *quarterly averages* for *six years*, from 1856 to 1861 inclusive, were :—

		Per Cent. of Annual Average.
March quarter	448·17	or 34·67
June „	189·33	„ 14·65
September „	189·0	„ 14·63
December „	466·0	„ 36·05

For 1862 the *quarterly numbers* were :—

	Average.	Per Cent. of Annual Total.	Increase per Cent.	Decrease per Cent.
March quarter	415 or	27·90	—	6·77
June „	192 „	12·88	—	1·77
September „	182 „	12·24	—	2·39
December „	699 „	46·98	10·93	—

For the—

	Per Cent. of Annual Average.
<i>First half-year</i> the average was	637·5 or 49·32
<i>Second „ „ „ „</i>	655·0 „ 50·68

In 1862 the—

	Average.	Per Cent. of Annual Total.	Increase per Cent.	Decrease per Cent.
<i>First half-year</i> gave.....	607 or	40·78	—	8·54
<i>Second „ „ „ „</i>	881 „	59·22	8·54	—

The *cargoes* of the vessels to which casualties occurred around our coasts give the following results upon the *annual average* for *seven years*, from 1855 to 1861 inclusive, ranged in the order of disaster :—

	Per Cent. of Annual Average.
Coals	32·8
In ballast, not colliers	10·88
General cargo	8·14
Grain, oatmeal, flour, provisions	7·49
Metallic ores	7·33
Colliers in ballast	5·96
Various or unknown	5·64
Timber or bark	5·34
Stone, slate, lime, bricks, or clay	4·96
Salt	2·34
Passengers and general cargo	1·88
Manure, kelp, or oil cake	1·74
Fishing smacks	1·66
Fish or oil	1·24
Potatoes or fruit	1·18
Sugar, coffee, spices, tea, and molasses	·67
Cotton	·52
Wine or spirits	·23

During the year 1862 the *cargoes* of the various vessels to which

accidents happened give the following percentages and comparative figures, say :—

Cargoes.	Percentage of Annual Total.	Increase per Cent.	Decrease per Cent.
Coals	32·46	—	·34
In ballast, not colliers	9·03	—	1·85
General cargo	5·09	—	3·05
Grain, oatmeal, flour, provisions	5·97	—	1·52
Metallic ores	6·18	—	1·15
Colliers in ballast	7·01	1·05	—
Various or unknown	10·78	5·14	—
Timber or bark	4·87	—	·47
Stone, slate, lime, bricks, or clay	5·47	·51	—
Salt	1·37	—	·97
Passengers and general cargo	3·01	1·13	—
Manure, kelp, or oil cake	1·7	—	·04
Fishing smacks	4·6	2·94	—
Fish or oil	1·04	—	·2
Potatoes or fruit	·71	—	·47
Sugar, coffee, spices, tea, and molasses	·49	—	·18
Cotton	·11	—	·41
Wine or spirits	·11	—	·12

It may neither be uninteresting nor uninstrusive to notice the differences pertaining to *various localities*, and for this purpose (according to the plan of the Privy Council Committee) dividing our coasts into *eight departments*, we find that on the *average* of the *six years* from 1856 to 1861 inclusive—

	Percentage of Annual Average.
The <i>East Coast</i> , from Dungeness to Pentland Frith inclusive, gives	49·4
„ <i>West Coast</i> , from Land's End to Greenock inclusive	24·75
„ <i>Irish Coast</i>	10·38
„ <i>South Coast</i> , from Land's End to Dungeness exclusive	9·26
„ <i>Northern Islands</i> , Orkney, Shetland, Hebrides, Islay, } Campbelton, and north end of Scotland	3·58
„ <i>Isle of Man</i>	1·1
„ <i>Lundy Island</i>	·8
„ <i>Scilly Isles</i>	·73

These various sections furnish in 1862 the following figures and comparisons :—

District.	Percentage of Annual Total.	Increase per Cent.	Decrease per Cent.
The <i>East Coast</i> , from Dungeness to Pentland Frith inclusive ... }	51'41	2'01	—
„ <i>West Coast</i> , from Land's End to Greenock inclusive	22'51	—	2'24
„ <i>Irish Coast</i>	10'08	—	'3
„ <i>South Coast</i> , from Land's End to Dungeness exclusive	9'81	'55	—
„ <i>Northern Islands</i> , Orkney, Shetland, Hebrides, Islay, Campbelton, and north end of Scotland.....	4'44	'86	—
„ <i>Isle of Man</i>	'74	—	'36
„ <i>Lundy Island</i>	'67	—	'13
„ <i>Scilly Isles</i>	'34	—	'39

Referring to the *description of vessels* to which casualties happened, it is found that of the number recorded in the *six years* from 1856 to 1861 inclusive the proportions were as follow :—

	Percentage of Annual Average.
Schooners	31'28
Brigs	24'93
Barques	9'7
Sloops	7'34
Brigantines	6'87
Smacks	5'17
Ships	4'69
Steam vessels	3'0
Various and unknown	2'9
Galliot.....	1'42
Luggers	1'3
Ketches	'72
Cutters	'68

In 1862 the following variations occur :—

Class of Vessels.	Percentage of Annual Total.	Increase per Cent.	Decrease per Cent.
Schooners	26'87	—	4'41
Brigs	20'53	—	4'4
Barques	10'07	'37	—
Sloops	6'68	—	'66
Brigantines	9'58	2'71	—
Smacks	6'57	1'4	—
Ships	4'71	'02	—
Steam vessels	6'4	3'4	—
Various and unknown	4'16	1'26	—
Galliot	1'15	—	'27
Luggers	1'53	'23	—
Ketches	1'2	'48	—
Cutters	'55	—	'13

Having regard to the *size* of the various vessels, we find that during the *seven years* from 1855 to 1861 inclusive casualties happened to—

						Percentage of Annual Average.	
Vessels from 101 tons and under 300 tons in the proportion of...						40·43	
“	“	51	“	100	“	“	31·86
“	not exceeding 50 tons				“	“	15·0
“	from 301 tons and under 600				“	“	8·53
“	“	601	“	900	“	“	2·48
“	“	901	“	1,200	“	“	1·05
“	“ 1,200 tons and upwards						·58
“	tonnage unknown						·07

In 1862 the sizes of the various vessels were found to be as under :—

Tonnage.	Percentage of Annual Total.	Increase per Cent.	Decrease per Cent.
101 tons and under 300 tons	42·91	2·48	—
51 “ 100 “	24·14	—	7·72
Not exceeding 50 tons	18·66	3·66	—
301 tons and under 600 tons	10·18	1·65	—
601 “ 900 “	2·41	—	·07
901 “ 1,200 “	1·1	·05	—
1,200 tons and upwards	·6	·02	—
Tonnage unknown	Nil	—	·07

The *ages of the vessels* to which accidents occurred present a remarkable variety, giving the following results for the *four years* from 1858 to 1861 inclusive :—

						Percentage of Annual Average.
Age unknown						16·98
15 years and not more than 20 years						15·77
21	“	“	30	“	“	14·51
3	“	“	7	“	“	13·1
11	“	“	14	“	“	9·54
Under 3 years old						8·41
8 years and not more than 10 years						7·24
31	“	“	40	“	“	6·67
41	“	“	50	“	“	3·9
51	“	“	60	“	“	2·14
61	“	“	70	“	“	·95
71	“	“	80	“	“	·51
81	“	“	90	“	“	·15
91	“	“	100	“	“	·08
101 and upwards						·05

For 1862 the figures were:—

Age of Vessels.	Percentage of Annual Total.	Increase per Cent.	Decrease per Cent.
Age unknown.....	24·19	7·21	—
15 years and not more than 20 years	11·82	—	3·95
21 " " 30 "	14·56	·05	—
3 " " 7 "	14·83	1·73	—
11 " " 14 "	8·48	—	1·06
Under 3 years old	6·68	—	1·73
8 years and not more than 10 years	7·17	—	·07
31 " " 40 "	6·84	·17	—
41 " " 50 "	3·23	—	·67
51 " " 60 "	1·37	—	·77
61 " " 70 "	·55	—	·40
71 " " 80 "	·22	—	·29
81 " " 90 "	Nil	—	·15
91 " " 100 "	·06	—	·02
101 and upwards	Nil	—	·05

It will doubtless have been observed that in the *tables of averages* relating to cargoes, localities, the description, size, and age of vessels, I have followed the *order of disaster*, but in the comparison of the year 1862 with such averages I have followed the *order of the tables themselves*, thus exhibiting the results, as it seemed to me, with greater clearness.

The *six years* ending 1862 inclusive give an average of—

		Percentage of Annual Average.
Casualties ending in <i>partial loss</i>	837·83	or 62·14
" " <i>total loss</i>	510·5	„ 37·86
Average total	1348·33	

While 1862 alone shows—

Issue of Casualties.	Percentage of Annual Total.	Increase per Cent.	Decrease per Cent.
Ending in <i>partial loss</i> 967 or	64·99	2·85	—
" <i>total loss</i> 521 „	35·01	—	2·85
Total 1,488			

Showing an *increase* on *partial losses* of 15·42 per cent., and on *total losses* of 2·06 per cent.

For *seven years* ending 1861 inclusive the proportion of—

	Per Cent.
Casualties, not being collisions, was	76·27
Collisions	23·73

In 1862 the proportions were :—

Casualties.	Per Cent.	Increase per Cent.	Decrease per Cent.
Not being collisions	77·28	1·01	—
Collisions	22·72	—	1·01

From the results of the *ten years* from 1852 to 1861 inclusive it would appear that the *average rate of casualty per voyage* upon—

British ships has been ·49, or 1 in 204, the *lowest* being ·35, or 1 in 286, in 1853; the *highest*. ·59, or 1 in 169, in 1859; upon—

Foreign vessels the percentage has been ·43, or 1 in 233, the *lowest* being ·32, or 1 in 313, in 1853; the *highest* ·58, or 1 in 172, in 1856.

Grouping *British and Foreign vessels together*, the result is ·48, or 1 in 208, the *lowest* being ·34, or 1 in 294, in 1853; the *highest*, ·56, or 1 in 179, in 1859, and the same in 1861.

In 1862 the rate of casualty per voyage on *British* ships was ·72, or 1 in 138,⁵ being an *increase* of ·23 upon the *average of ten years*;—upon

Foreign vessels the percentage was ·5, or 1 in 199, being an *increase* of ·07;—upon

British and Foreign vessels together, ·68, or 1 in 147, being an *increase* of ·20.

It is remarkable that the rate of casualty to *British* ships in 1862 is the *highest* of any year from 1852 inclusive. The Channel Islands are not included in these tables.

The *value of the property* lost upon our coasts has been roughly estimated as amounting—

	£
In 1857 to	519,301
„ '58 „	435,765
„ '59 „	750,121
„ '60 „	603,065
„ '61 „	1,000,957
„ '62 „	941,040
Total for <i>six years</i>	<u>4,250,249</u>

From a paper read before our Society by John Glover, Esq., 17th June, 1862, and published in the *Journal* for March, 1863, I find that from 1850 to 1860 the *number* of British sailing vessels engaged in the home and foreign trade increased 9·0 per cent.; the *tonnage* increased 27·0 per cent., but the *number of men* employed

to *each* 100 tons decreased 19·0 per cent.; while *steam vessels* belonging to the United Kingdom, and engaged in the same trades, increased in *number* 118·0 per cent., in *tonnage* 282·0 per cent., but in the *number of men* employed to *each* 100 tons decreased 21·0 per cent.

As the nearest comparison with these figures I am able to make, I find that in the year 1852 casualties occurred to 1,115 vessels on or around our coasts, while in 1862 the number rose to 1,827, or an increase of 63·85 per cent.

It may not be unimportant to ask the question whether, with the enormous *increase* of our ships both in *number* and *tonnage*, and a *higher ratio of activity*, the very large *reduction* in the percentage of hands employed to each 100 tons, notwithstanding the admitted advantages of patent capstans, windlasses, reefing topsails, and other mechanical appliances, may not have a *close relation to the terrible increase in casualties* which has occurred while “*examinations*” and “*certificates*” of “*service*” and “*competency*” might reasonably have led us to hope for a decrease in the number of disasters ?

But while we are thus led to remark so great an increase in the number of vessels to which casualties happened around our five thousand miles of coast during 1862, it is specially gratifying to note how large a reduction has occurred in the number of lives sacrificed thereby ; the average of the last eleven years gives nearly 800 lives lost per annum ; while in 1862 the number fell to 690.

It would indeed but ill become me to bring the subject of this evening’s paper before you without calling your attention to the efforts of such noble associations as the *National Lifeboat Institution* and the *Shipwrecked Mariner’s Society*, to which in so large a measure the honour belongs—either directly or indirectly—of saving hundreds of imperilled lives year by year ; may the just claims of these admirable institutions be yet more fully recognized, and their efforts be still more liberally seconded by the whole body of our countrymen !

Having thus briefly—somewhat superficially—and very imperfectly placed a few of the “*statistics relating to shipping casualties*” before you, permit me to express the earnest hope that abler minds than mine may consider the subject of sufficient interest and importance to enlist their efforts in rendering the information which is constantly accumulating *practically available* to all the classes specially concerned.

As we are so pre-eminently a maritime nation it would seem but the natural course of things that, when the statistics of accidents, agriculture, crime, life assurance, pauperism, population, sanitary arrangements, taxation, water supply, and a hundred other subjects receive much and continuous attention, the disasters inseparable

from our navigation of the seas should also obtain their share of careful record and examination.

I have purposely *avoided deductions* from the foregoing figures, leaving these to be drawn by individual minds, according to their particular circumstances and points of view, and should I have succeeded in awakening any interest in the subject, I shall indeed be glad.

I need hardly say, it will afford me pleasure if in any way I can assist gentlemen in inquiries they may desire to make in the direction indicated.

It now only remains for me to thank you—and I do so most sincerely—for the honour you have done me in listening to the humble effort of to-night.

On SHIPWRECKS in the ROYAL NAVY. By WILLIAM BARWICK HODGE, one of the Vice-Presidents of the Statistical Society.

[Read before the Statistical Society, 15th March, 1864.]

THE Tables appended to this paper have been drawn up for the purpose of showing the relative proportion of losses, arising from accidental causes only, among the vessels of the Royal Navy during war and during peace. The destruction or capture of vessels effected by enemies during war not being included.

The facts are taken from James's Naval History and a book upon Shipwrecks in the Royal Navy by Mr. W. S. Gilly.* Both these works are said by their authors to have been based upon information obtained from official documents, access to which was given to the writers by the Admiralty. The accuracy of James's work is so well established as to need no remark, and from a close examination of Mr. Gilly's book, I believe it to have been compiled with great care.

The Table I contains a statement of the average annual numbers of vessels employed as cruisers during the two wars consequent upon the first French revolution. The vessels are divided into four classes, namely :—1. Ships of the line carrying 60 guns and upwards. 2. Frigates carrying 28 guns or any higher number less than 60. 3. Smaller vessels carrying less than 28 guns. 4. Troop and store ships and other unarmed vessels. In order to restrict the number of classes, I have found it necessary to include among the frigates a class of vessels which do not come strictly within that denomination, although much smaller than many modern frigates. These are two-decked vessels, carrying from 50 to 60 guns, many of which were common in the Navy at the commencement of the war, but during the progress of it they gradually fell into disuse.

Table II contains a list of the annual losses, during the period in question, of vessels that foundered or were wrecked, or accidentally burned. The year 1802, which was a year of peace, is excluded from the comparison.

From these two tables it appears that, upon the average, during the years from 1793 to 1801, and 1803 to 1815, 93 line of battle ships, 124 frigates, and 281 smaller vessels, or 498 in all, were annually employed as cruisers, and that during the 22 years referred to, 28 line of battle ships, 76 frigates, and 248 smaller vessels, were accidentally destroyed, independently of the vessels lost in action.

* London : Parker, 1857.

The average annual percentage of loss upon the average number of each class employed, was as follows :

	Ships of the Line.	Frigates.	Smaller Vessels.	Total of all Classes.
	Per cent.	Per cent.	Per cent.	Per cent.
Wrecked	0·88	2·57	3·07	2·54
Foundered	0·15	0·15	0·87	0·55
Burnt	0·34	0·07	0·07	0·12
Total	1·37	2·79	4·01	3·21

The total annual rates per cent. upon the several classes were in the proportion of 1, 2, and 3, very nearly the proportion of losses among frigates being a little more than twice, and among the smaller classes not quite three times as great as among ships of the line. The risk of destruction by fire was very nearly five times as great in ships of the line as in smaller vessels.

Of the total number of vessels lost—

278	or	79·0	per cent.	were wrecked.
61	„	17·3	„	foundered.
13	„	3·7	„	were burned.
<hr/>				
In all 352		100·0		

In 1802, a year of peace, three sail only (one frigate and two smaller vessels) were lost, out of the average number of 352 vessels employed, being at the rate of 0·85 per cent. per annum.

According to the best estimate that can be framed, the 352 vessels referred to in Table II, had on board at the time they were lost crews amounting in the aggregate to 50,186 men, of whom 14,311 perished. This is in the proportion of 28½ per cent.

A valuable comparison of the losses in this respect in the Royal, with those of the same kind in the Mercantile, Navy may be obtained from a paper upon Marine Assurance, dated May, 1852, published by Mr. William Lance, of Lloyd's, in the Assurance Magazine.* Mr. Lance estimated that out of the crews of 4,737 vessels wrecked, numbering in all 38,627 men, 10,368 were drowned. This was at the rate of 26·84 per cent., a ratio approximating very nearly to the proportion of deaths in the Royal Navy. It might have been expected that the ratio of deaths in the latter would have been smaller, considering the superior construction of the vessels, the greater number of boats supplied to them, and the more perfect

* Vol. ii, p. 362.

discipline of the men; but in a ship of war the number of the crew is very much greater in proportion to the size of the vessel than in the mercantile marine, and this in the former service must necessarily increase the difficulty of saving life in the event of a wreck.

In a paper on the "Mortality arising from Naval Operations," which I had the honour to lay before the Society,* I endeavoured to estimate the loss of life in the Navy from shipwreck during the period under consideration, and calculated it at 13,621 men. On going over the facts again, I have added to the list several cases of wreck which I had not previously noticed, and these have raised the number of men lost to 14,311. I have also corrected the dates of several wrecks which has caused an alteration in the distribution of the numbers of the annual losses as well as in the aggregate number.

The annual deaths from shipwreck in the Royal Navy during war appear to have been at the rate of 6 per 1,000 of the mean number of men employed. This was double the ratio of deaths from injuries received in battle, which was only 3 per 1,000 annually.

The following statement shows—

The Proportion of the Crews lost in	Ships of the Line.	Frigates.	Smaller Vessels.	Total of all Classes.
	Per cent.	Per cent.	Per cent.	Per cent.
Vessels wrecked	38·43	8·30	19·30	19·29
„ foundered	66·90	44·26	85·87	75·66
„ burnt	31·36	98·26	24·71	37·08
„ lost from all } causes }	39·25	12·56	35·71	28·51

The men serving on board frigates seem to have incurred less risk, or to have had peculiar means of safety, as the proportion of loss among them was only one-third of the proportion lost on other vessels.

The distribution of the total loss of men is as follows:—

7,440	or	52·00	per cent.	were lost in vessels wrecked.
5,032	„	35·20	„	„ that foundered.
1,839	„	12·80	„	„ burnt.
<hr/>				
In all 14,311		100·00		

In order to determine the effect of the seasons upon the prevalence of wrecks, I have drawn out the following statement in which, the numbers being insufficient for a monthly enumeration, I have

* *Statistical Journal*, vol. xviii, p. 217.

given those occurring in each quarter of the year, beginning with the second in order to bring the summer and winter quarters together. It comprises the whole of the ships lost during the period referred to in Table II, with the exception of 1 ship of the line and 22 smaller vessels, in relation to which the exact dates of loss cannot be ascertained.

Months.	Vessels Lost.							
	Numbers of			Total of all Classes.	Percentage of			Total of all Classes.
	Ships of the Line.	Frigates.	Smaller Vessels.		Ships of the Line.	Frigates.	Smaller Vessels.	
April, May, June .	3	11	32	46	15·0	14·9	14·4	14·6
July, Aug., Sept. .	—	20	44	64	—	27·0	19·8	20·3
Oct., Nov., Dec.	11	24	79	114	55·0	32·4	35·6	36·0
Jan., Feb., March .	6	19	67	92	30·0	25·7	30·2	29·1
	20	74	222	316	100·0	100·0	100·0	100·0

Table III contains an enumeration of the vessels lost to the Royal Navy from the close of the year 1815 to that of 1857. The numbers are so small that an annual statement of them would be useless, and I have therefore thrown them into groups of seven years each, and I have adopted these periods because some of them coincide with the periods for which statistical reports as to the health and mortality of the Navy have been published.

In the 42 years comprised in the Table III, 75 vessels only were lost, being at the rate of 1·8 per annum. This is little more than one-tenth of the average number (rather more than 16) annually lost in the 22 years comprised in Table II. The 42 years were principally years of peace, and did not lead to any warlike operations of importance, except during the Russian War (1854 to 1856). Only two ships employed in the operations against the Russians were wrecked, and the period of seven years in which the war took place shows a smaller loss, both of ships and men, than any other in the table. This, considering the much larger number of vessels employed, is very remarkable.

I have not been able to ascertain the average number of the vessels employed, except for three of the periods comprised in Table III. From 1816 to 1822, the average number was 138, and of these 17 were lost, being at the rate of 1·76 per cent. per annum. From 1830 to 1836, an average number of 248 vessels was employed, and of these 10, being at the rate of 0·58 per cent. per annum, were lost.

From 1837 to 1843, an average of 262 vessels was employed, and of these 10, being at the rate of 0·545 per cent. per annum, were lost. The three periods may be considered as giving a fair example of the average losses during peace, which for the whole 21 years were at the rate of 0·815 per cent. per annum, as compared with 3·21 per cent. per annum during war, being in the ratio of 1 to 4 very nearly.

The aggregate crews of the 75 vessels referred to in Table III, amounted to 7,312 men, and of these 1,900 perished. This is at the rate of 25·99 per cent., being almost identical with the proportion of loss in the mercantile marine already noticed, and which, it was observed, approximated very nearly to the rate of loss in the Royal Navy during war. It seems, therefore, to be the result of rather an extensive experience, that the loss of a vessel is attended, upon the average, with the loss of about one-fourth of her crew.

An examination of Table III shows a constant diminution in the losses of vessels from accidental causes in the period from 1815 to 1857. In the years 1856 and 1857 one ship only was lost, and as the average number of vessels employed during those years was 202, the annual ratio of loss was 0·248, or a small fraction under a quarter per cent, and less than one-seventh of the average annual ratio, 1·76 per cent. for the period, 1816-22.

This diminution is no doubt due in an important degree to the application of the auxiliary power of steam; but much of it may be attributed to scientific improvements in navigation and in the construction of our ships. A short time before the peace of 1815, the system of diagonal bracing, which added so greatly to the strength of the vessels, was, with other improvements, introduced into the navy by Sir Robert Seppings. His account of it was published in the "Philosophical Transactions" for 1814, but many years would of course elapse before it could be completely adopted. It is strange that there should have been so much delay in applying to ship building a principle founded upon simple and well-known properties of the triangle and parallelogram, and practised from time immemorial in land carpentry; the employment of it for the navy having, it is said, been suggested to Sir Robert Seppings by his observation of the gate commonly used in the country.*

* The principle of construction, generally adopted in this country about the year 1851, in consequence of the extraordinary success of the United States yacht "America" in that year, of lengthening the bow and carrying the greatest breadth of beam further aft, which has wonderfully improved the sailing qualities of our ships, is not a recent discovery. It appears to have been well known to the French naval architects in the last century. The frigate "Endymion" was built upon this principle, in imitation of a vessel captured from the French in 1794. She turned out one of the fastest vessels in the service, and by her superior sailing secured the capture of the American frigate "President," which would have escaped the squadron that took her, had she not been overtaken and brought to

Towards the end of the last century, many vessels were lost from the practice of coppering ships captured from the French. That nation, as they did not sheathe their ships with copper, made very general use of iron bolts for fastenings. The galvanic action set up by the contact of the two metals, the nature of which was not then understood, although its effects had been previously observed, caused such a rapid corrosion of the iron, that many of the vessels some-time after being coppered, were found to be falling to pieces. This fact was mentioned to me by Mr. Knowles, the learned author of a valuable "Inquiry into the Means taken for Preserving the Navy" (London, 1821), and it was probably in a great measure the cause of the remarkable result mentioned by James ("Naval History," vol. iii, p. 358), that of twenty-two vessels of the Royal Navy that foundered between the years 1793 and 1801, fourteen were of foreign build, an enormous proportion considering the small number of foreign-built vessels that is likely to have been employed.

In a "Discourse of Trade to the East Indies" (London, 1621), written by Thomas Mun, "famous in his time among merchants," is recorded the following statement of the casualties among shipping two centuries and a half ago :—

"Of 79 ships sent out" (to the East Indies) "before the month of July, 1620, 34 had come home in safetie, 4 have been worn out by long service, 2 were overwhelmed in the trimming there, 6 have been cast away by the peril of the seas, 12 have been sur-prised" (whether by pirates or public enemies is not stated) "and 21 ships still remained."

The following is the proportion of casualties among the vessels of which the fates were ascertained :—

38	or	65·50	per cent.	returned in safety.
8	„	13·80	„	were lost.
12	„	20·70	„	were captured.
<hr/>				
58		100·00		
<hr/>				

These figures do not give us the true average ratios of casualties, as in order to determine them it would be necessary to know the number of voyages performed and the time the ships were employed.

action by the "Endymion." Notwithstanding this evidence of the value of the principle, it seems to have been subsequently entirely neglected by our naval authorities.

TABLE I.—Showing the Average Numbers of Vessels Employed

Year.	Ships of the Line.			Frigates.			Smaller Armed	
	Ships.	Guns.	Tonnage.	Ships.	Guns.	Tonnage.	Ships.	Guns.
1793	55	4,247	93,104	80	2,821	63,388	71	1,053
'94	88	6,750	147,881	118	4,217	95,702	96	1,430
'95	98	7,568	165,900	133	4,830	111,909	120	1,795
1796	106	8,168	179,566	138	4,990	118,006	144	2,177
'97	106	8,077	177,684	138	4,971	119,352	182	2,666
'98	104	7,988	178,018	132	4,821	117,214	223	3,195
'99	103	7,847	176,505	128	4,691	115,546	238	3,422
1800	100	7,662	172,177	130	4,785	119,475	240	3,457
1801	102	7,851	177,476	132	4,871	123,051	227	3,260
'02	—*	—	—	—	—	—	—	—
'03	54	4,097	95,233	89	3,279	82,962	140	2,118
'04	79	6,173	142,297	108	3,957	99,696	228	3,248
'05	93	7,286	166,952	122	4,459	113,241	297	4,109
1806	104	7,986	182,823	132	4,805	122,357	342	4,746
'07	108	8,209	189,010	136	4,935	125,868	369	5,171
'08	113	8,579	198,531	138	5,019	128,590	400	5,673
'09	111	8,460	196,363	144	5,240	135,609	419	5,946
'10	108	8,265	192,978	145	5,299	138,998	389	5,538
1811	105	8,061	189,290	136	4,970	131,811	361	5,155
'12	102	7,889	185,862	123	4,505	120,292	352	5,079
'13	100	7,747	183,467	124	4,597	124,849	358	5,233
'14	73	5,563	132,968	118	4,462	122,598	326	4,875
'15	38	2,925	70,596	80	3,058	83,652	218	3,344
Annual average	93	7,154	163,395	124	4,527	114,280	261	3,759
*Year of Peace, 1802	} 68	5,183	118,360	105	3,868	98,639	157	2,313

as Cruisers in the Royal Navy in each Year from 1793 to 1815.

Vessels.	Troop and Store Ships, &c.		Total of all Classes.			Estimated Average Numbers of Men and Officers Employed.	Year.
Tonnage.	Ships.	Tonnage.	Ships.	Guns.	Tonnage.		
20,774	—	—	206	8,121	177,266	43,000	1793
28,912	—	—	302	12,397	272,495	80,000	'94
35,082	—	—	351	14,193	312,891	94,000	'95
42,359	—	—	388	15,335	339,931	105,000	1796
51,795	—	—	426	15,714	348,831	114,000	'97
61,230	—	—	459	16,004	356,462	115,000	'98
64,798	—	—	469	15,960	356,849	115,000	'99
65,379	—	—	470	15,904	357,031	107,000	1800
61,385	—	—	461	15,982	361,903	127,000	1801
—	—	—	—	—	—	—	'02*
44,128	30	23,196	313	9,494	245,519	80,000	'03
66,290	37	24,100	452	13,378	332,383	97,000	'04
79,060	31	16,630	543	15,854	375,883	115,000	'05
90,954	29	14,952	607	17,537	411,086	115,000	1806
100,601	27	15,656	640	18,315	431,135	124,000	'07
112,396	25	16,535	676	19,271	456,052	125,000	'08
119,010	27	18,014	701	19,646	468,996	125,000	'09
110,780	33	23,320	675	19,102	466,076	137,000	'10
103,487	38	27,964	640	18,186	452,552	139,000	1811
102,888	40	29,908	617	17,473	438,950	137,000	'12
106,140	46	34,842	628	17,577	449,298	138,000	'13
100,707	48	36,411	565	14,900	392,684	111,000	'14
72,034	36	27,621	372	9,327	253,903	81,000	'15
74,554	20	14,052	498	15,440	366,281	110,180	Annual average
43,953	22	8,683	352	11,364	269,635	— {	*Year of Peace, 1802

TABLE II.—*Showing the Numbers of Ships of the Royal Navy Accidentally in Action not*

Years.	Ships of the Line.				Frigates.			
	Total Numbers of				Total Numbers of			
	Vessels.	Guns.	Crews.	Men Lost.	Vessels.	Guns.	Crews.	Men Lost.
1793	1	74	531	—	—	—	—	—
'94	1	64	450	450	2	60	413	—
'95	2	172	1,215	11	2	82	514	—
1796	3	228	1,717	444	8	308	1,880	432
'97	1	64	441	—	6	210	1,373	213
'98	1	74	576	—	6	214	1,379	261
'99	2	162	1,110	291	5	172	1,128	270
1800	3	248	1,746	597	1	36	244	—
1801	1	74	477	400	5	182	1,127	—
'02	*—	—	—	—	—	—	—	—
'03	1	64	442	442	5	168	1,171	—
'04	2	148	981	25	5	194	1,246	71
'05	—	—	—	—	2	80	502	2
1806	2	138	927	353	—	—	—	—
'07	2	148	1,071	781	6	224	1,462	428
'08	—	—	—	—	6	204	1,370	240
'09	1	64	442	—	2	64	422	—
'10	1	74	576	360	3	106	678	11
1811	3	246	1,729	1,718	5	182	1,256	253
'12	—	—	—	—	4	136	886	13
'13	1	74	531	—	1	38	284	—
'14	—	—	—	—	—	—	—	—
'15	—	—	—	—	2	74	540	50
	28	2,116	14,962	5,872	76	2,734	17,875	2,244
Vessels—								
Wrecked...	18	1,330	9,351	3,594	70	2,496	16,449	1,365
Foundered	3	212	1,459	976	4	162	967	428
Burnt.....	7	574	4,152	1,302	2	76	459	451
	28	2,116	14,962	5,872	76	2,734	17,875	2,244
*Year of Peace, 1802... }	—	—	—	—	1	50	310	—

Lost in each Year from 1793 to 1815. (N.B.—Vessels Captured or Destroyed Included.)

Smaller Vessels.				Total of all Classes.				Years.
Total Numbers of				Total Numbers of				
Vessels.	Guns.	Crews.	Men Lost.	Vessels.	Guns.	Crews.	Men Lost.	
3	12	135	10	4	86	666	10	1793
5	70	472	109	8	194	1,335	559	'94
4	48	346	123	8	302	2,075	134	'95
11	138	898	388	22	674	4,495	1,264	1796
9	122	716	491	16	396	2,530	704	'97
7	92	631	35	14	380	2,586	296	'98
10	146	975	208	17	480	3,213	769	'99
13	174	1,121	623	17	458	3,111	1,220	1800
10	142	813	228	16	398	2,417	628	1801
—	—	—	—	—	—	—	—	'02*
7	98	609	128	13	330	2,222	570	'03
15	116	898	7	22	458	3,125	103	'04
14	166	965	281	16	246	1,467	283	'05
11	162	954	676	13	300	1,881	1,029	1806
25	264	1,478	732	33	636	4,011	1,941	'07
23	282	635	200	29	486	2,005	440	'08
16	206	1,127	592	19	334	1,991	592	'09
10	112	557	144	14	292	1,811	515	'10
9	80	509	77	17	508	3,494	2,048	1811
16	186	965	328	20	322	1,851	341	'12
12	192	1,139	138	14	304	1,954	138	'13
15	172	1,111	574	15	172	1,111	574	'14
3	48	295	103	5	122	835	153	'15
248	3,028	17,349	6,195	352	7,878	50,186	14,311	Vessels— Wrecked Foundered Burnt
190	2,228	12,776	2,481	278	6,054	38,576	7,440	
54	734	4,225	3,628	61	1,108	6,651	5,032	
4	66	348	86	13	716	4,959	1,839	
248	3,028	17,349	6,195	352	7,878	50,186	14,311	
2	32	249	109	3	82	559	109	{ *Year of Peace, 1802

TABLE III.—*Showing the Number of Vessels of the Royal Navy Lost from 1816 to 1857 Inclusive.*

Years inclusive.	Ships of the Line.	Frigates.				Smaller Vessels.				Total of both Classes.			
		Vessels.	Guns.	Crews.	Men Lost.	Vessels.	Guns.	Crews.	Men Lost.	Vessels.	Guns.	Crews.	Men Lost.
1816-22 ...	None	3	114	874	—	14	188	1,294	265	17	302	2,168	265
'23-29 ...	—	1	48	275	—	24	247	1,622	884	25	295	1,897	884
'30-36 ...	—	2	74	435	18	8	57	429	123	10	131	864	141
'37-43 ...	—	—	—	—	—	10	87	784	270	10	87	784	270
'46-50 ...	—	—	—	—	—	6	52	808	251	6	52	808	251
'51-57 ...	—	—	—	—	—	7	51	791	89	7	51	791	89
Wrecked ... Foundered	—	6	236	1,584	18	69	682	5,728	1,882	75	918	7,312	1,900
		6	236	1,584	18	65	644	5,451	1,705	71	880	7,035	1,723
		—	—	—	—	4	38	277	177	4	38	277	177
		6	236	1,584	18	69	682	5,728	1,882	75	918	7,312	1,900

RESOURCES of BRAZIL. *Presented by* JAMES HEYWOOD, M.A.,
F.R.S.

[Read before the Statistical Society, 19th April, 1864.]

BRAZIL is a vast, fertile, and thinly peopled country, occupying nearly one-half of the continent of South America.

About half a million of Indian inhabitants still remain, connected principally with the vast forests of the northern provinces: the collection and preparation of India rubber affords occupation to many of the aborigines in the neighbourhood of the River Amazon.

A desire to reach the East Indies by sailing westwards from Portugal led to the discovery of the eastern coast of South America in 1500: the territory thus discovered was taken possession of by the Portuguese naval commander, Pedro Alvares de Cabral. Jesuit missionaries early established themselves in Brazil, and entered into commercial enterprises with the aid of the natives, whose services and industry they skilfully obtained for the aggrandisement of their order.

During the sixteenth, seventeenth, and eighteenth centuries, Brazil was a colony of Portugal.

In 1807, the invasion of Portugal by the army of Napoleon I, under Junot, led to the retirement of the Prince Regent of Portugal with his family to Brazil; a British squadron escorted the Portuguese fleet, and a court was instituted at Rio de Janeiro.

Portugal afterwards became a sort of dependency of Brazil, and was governed by a council of regency, the royal family remaining in South America until the restoration of peace.

In 1821 a constitution was granted to Brazil, and in 1822, Don Pedro, son of the King of Portugal, was chosen Emperor by the Brazilians, and Brazil became an independent State.

A fresh constitution followed this change.

The Emperor has authority to select ministers of state, to withhold, temporarily, his sanction from legislative measures, and to dissolve the Chamber of Deputies. The country is divided into electoral districts, and the privilege of voting is conferred on all persons possessing an annual income, of any sort, of a hundred milreis, which is a little more than 10*l.*, but minors, monks, and servants are not allowed to vote.

The 10*l.* voters choose electors, each of whom must have an income of 200 milreis, or a little more than 20*l.* a-year, as a qualifica-

tion; the electors choose the deputies, who must have an income of 400 milreis each, or about 45*l.* per annum.

A somewhat different system is pursued in the selection of candidates for the Senate. Each candidate for that office must have an income of 800 milreis, or about 90*l.* a-year; and in the case of a vacancy, three persons are elected for the province by the system of double election. From the three candidates so chosen, the Emperor selects one as a senator, which office is tenable for life.

The general Legislative Assembly consists of two houses, the Senate, consisting of 55 members, and the Chamber of Deputies, comprising 122 representatives. Each deputy is paid for his attendance, 2,400 milreis, or about 270*l.* a-year besides travelling expenses; and the pay of the senator is 3,600 milreis, or about 400*l.* a-year. All persons born free in Brazil are Brazilian citizens; thus the Indians are citizens; slaves, as soon as they are freed are qualified to be primary voters for the election of deputies and senators, if they can make out the revenue of 100 milreis; the free born son of the freed man has all the rights of Brazilian citizenship.

There are seven Ministers, of the Empire or Interior, Justice, Foreign Affairs, the Marine, War, Finance, and Agriculture Commerce and Public Works. One of these is president, and considered chief of the ministry. The ministers are named by the Emperor, and are, in practice, dependent on majorities in the Legislature. Changes of ministry have latterly been very frequent—almost annual.

The Emperor's ministers are assisted by a Council of State, consisting of twelve ordinary and twelve extraordinary members, all named by the Emperor for life. The twelve ordinary members are constantly consulted on matters of administration and international questions, and are indeed a regular part of the system of Government. The whole twenty-four are convened on graver occasions. The Councillors of State, ordinary and extraordinary, are mostly ex-ministers.

The Brazilian titles of nobility (marquis, count, viscount, and baron) are only for life, and do not confer any political position. They are given as rewards of public service, as well as for electioneering influence.

At the head of each province is a president appointed by the central Government; and in each province there are district Chambers and a general Council (the Legislative Assembly of the province), the members of which are elected by the same voters as for the election of deputies and senators; and the same voters elect the justices of the peace for the municipal districts. All these provincial elections are for four years.

Population.

Mr. Christie, Minister at Rio de Janeiro, in a report to Earl Russell, 5th August, 1860, estimates the whole population of the empire of Brazil at about $7\frac{1}{2}$ millions, the aborigines being included, who are under a million, and the slaves also included being about three millions.*

The superficial area of the empire is calculated by some writers at 3,000,000, and by others at 2,500,000 square miles: on the latter supposition, there would be three persons, on an average, to each square mile. Brazil, in its extent of territory, is second only to the colossal empires of China and Russia, and is about the size of the United States of America previous to their separation into the Federal and Confederate States.

Large tracts of Brazil are uninhabited, or peopled only by a scattered population. The masses of inhabitants congregate near the coast, and around the chief sea ports; thus the district of the municipality of Rio de Janeiro comprises about 450,000 inhabitants, and the slaves in that district are rather less than half of the number. In the province of Rio de Janeiro, the slaves exceed in number the free population.

Bahia contains but a small proportion of whites, and the black inhabitants are so numerous, that it resembles an African city. Out of 125,000 inhabitants of Bahia, seven-eighths are said to be blacks, and nearly all the negroes are slaves.

Pernambuco has a population of about 80,000, of whom one-third are estimated to be slaves; one-third coloured free blacks; and remaining one-third are Brazilians and foreigners.

Whilst Brazil remained a colony of Portugal, but few women accompanied the emigrants to South America: the earliest European settlers intermarried and mixed with Indian women: afterwards an extensive intermixture of race occurred with the Africans who were bought for slavery.

The mixed population increases continually and rapidly in Brazil, and many of the so-called whites hardly deserve the appellation.

In the northern provinces the Indian element preponderates. In South Brazil the negroes are numerous. The greater part of the population of the Brazilian empire probably consists of mixed breeds, each of which has a distinguishing name; thus *Mulatto* denotes the offspring of a white with a negro; and *Mameluco*, that of a white with an Indian; *Cafuzo* denotes the mixture of the Indian and negro; *Curiboco*, the cross between the *Cafuzo* and the Indian; *Xibaro*, that between the *Cafuzo* and the negro. These are seldom,

* "Slave Trade Correspondence, B," presented to Parliament, in 1861, p. 44.

however, well demarcated; and all shades of colour exist in the country.*

Slavery.

Brazilian merchant ships contain a large proportion of slaves in their crews, which may be a reason for such ships seldom touching at any British ports, as slave sailors landing in Great Britain would immediately become free.

In 1826 a treaty was made between Great Britain and Brazil, providing that at the expiration of three years from the exchange of ratifications, the carrying on of the slave trade by any Brazilian subject, should be unlawful, and should be deemed and treated as piracy.

During those three years, terminating in 1830, a considerable increase of the trade in slaves took place; much Brazilian capital was embarked in slave traffic, and the greatest possible use of that source of profit was made as long as it was permitted.

In 1828 the number of slaves imported into Rio, amounted to 43,555;† and during the twelve months ending 30th June, 1830, the same port received 56,777 negroes, besides which, there were 21,554 imported into other parts of Brazil, making a total, in that year, of 78,331 imported slaves.‡

For twenty years, after 1830, the slave trade continued without abatement, and during that period a million of slaves were imported into Brazil. Lord Howden, Minister at Rio de Janeiro, reported an importation of upwards of 60,000 negroes in 1847.§ Slavers were seized in 1850 by orders of the British Government in the Brazilian ports and rivers, and this decided measure led to such active efforts on the part of the Brazilian Government to suppress the slave trade, that in 1851, Sir James Hudson reported that only 460 slaves had been imported into Brazil during the first quarter of that year. The slave trade has not been continued in Brazil since 1851, but there are upwards of three millions of slaves now in that empire.

Coffee plantations have been so profitable, that they have much increased in number, and many slaves have been brought from the northern or equatorial provinces of Brazil to the coffee grounds of the more southerly provinces.

An internal slave trade is thus kept up, involving some of the worst cruelties of forced removal of slaves from homes and separation of families. Mr. Westwood, the Consul at Rio de Janeiro, wrote to the Earl of Clarendon, 22nd January, 1857, "During the

* "The Naturalist in the River Amazon," vol. i, p. 35.

† "Walsh's Notices of Brazil," vol. ii, p. 322.

‡ "Sir T. F. Buxton, Slave Trade," p. 5.

§ "Slave Trade Correspondence, B," presented in 1849.

“last year, the value of slaves increased so much in this province, that large numbers were purchased in Bahia, Pernambuco, and other parts, by unfeeling speculators, and brought to this city for sale. Many of these unfortunate beings were brought from estates where they were born, and torn away from relations and old associations in the most inhuman and cruel manner possible.” Amongst the slaves transported from the north,” lately said a Brazilian senator in the Senate, “I have seen some in the market of Rio de Janeiro, who are children of 10 and 12 years old, who have left their parents in the north, and are sold here. A slave from the north told me that he was married in the province where he was sold, and that his wife remained there, and he was sent here.”* Mr. Scarlett, Minister at Rio de Janeiro, made a strong appeal to the Brazilian Government to stop this traffic in 1858, but without effect. According to recent reports from Mr. Christie, about 5,000 slaves a-year have been imported in this way for sale into Rio Janeiro during the last twelve years.†

This large deportation of slaves from the northern provinces is necessarily causing a dearth of labour in the north, where the heat being greater than in the south, African labour is not so easily replaced by Portuguese or German immigration.

The Brazilian nation is the owner of slaves estimated in the last annual report of the Finance Minister at 1,520. These are located on different national estates. The unproductiveness of these estates under slave labour has been the subject of complaint for some years past, in the Finance Minister's reports, and it is an economical point of interest on account of the dearness of slave labour. The Finance Minister stated in 1860, “The gross receipts of the Piauh estates were, in the financial year 1858-59, 3,931*l.* 10*s.* 4*d.*, which, distributed among 807 slaves, gives a result of about 4*l.* 17*s.* 5*d.* per annum for each slave, which is little more than the monthly wages of a slave! And from this sum no deduction is made for rent, or for increase of cattle. The receipts of the Pará estates during the same year amounted to 3,126*l.* 15*s.* 3*d.*, which, distributed among 127 slaves, gives the annual sum of 24*l.* 12*s.* 3*d.* for each slave.”‡ The Finance Minister recommended the sale of some of the estates and the removal of the slaves. In the last report he recommended the emancipation of slaves who from old age or permanent illness are unable to do any work, and he begs the Legislature to authorize their gratuitous emancipation; but he does not explain how they are to subsist after emancipation. “The

* Speech of Senator Silveira da Motta, 17th May, 1861, in “Slave Trade Correspondence, B,” presented 1862, p. 51.

† “Slave Trade Correspondence, B,” presented 1863, p. 112.

‡ Ibid., presented 1862, p. 40.

“ Government not considering itself authorised to grant emancipation, except by depositing in the public coffers the price at which the slaves may be valued by the proper authority, you will see that, in the impossibility of the slave’s acquiring freedom, his lot becomes much worse, he is condemned to a perpetual captivity and has no benefit from his long previous services and the fidelity and devotion with which he gave them. In such circumstances humanity implores you to resolve on the gratuitous emancipation of slaves of the nation when, by reason of advanced age or permanent infirmity of a grave character, they become unable to do work for the nation.” But how are these infirm slaves to maintain themselves?

Since the commencement of the present year, a Brazilian senator has introduced into the Senate a bill for compulsory emancipation of all slaves held by the Brazilian nation, as well as all slaves owned by convents and by foreigners (as for example Englishmen) from countries in which slavery is illegal. The bill has been rejected. The same senator has of late years unsuccessfully proposed bills for abolishing public sales of slaves by auction, and preventing the separation of husband and wife, parents and children by sale, and for other mitigations of slavery.

The following are the last published consular returns of prices of slaves in Brazil, 30th June, 1862 :—

Rio de Janeiro : Slaves for agriculture and mining, males, 107*l.* to 193*l.*; females, 107*l.* to 160*l.*; for domestic service, males, 129*l.* to 214*l.*; females, 107*l.* to 193*l.* Rio Grande do Sul : for agriculture, males and females, 130*l.*; for domestic service, males, 151*l.*; females, 135*l.* Bahia : African males, 180*l.*; African females, 108*l.*; Creole males, 108*l.* to 162*l.*; females, 65*l.* to 86*l.* Pará : males, 133*l.* to 177*l.*; females, 111*l.* to 144*l.*; males, with trades, 166*l.* to 222*l.*

The cessation of the slave trade has necessarily increased the price of slaves. It may be presumed also, in the absence of all statistics, that the number of slaves has diminished and is diminishing, after a loss for twelve years past of importations at the rate of 40,000 to 60,000 a-year. Cholera and other epidemics have carried away a large number of slaves since 1850; cholera alone is said to have carried away 16,000 in 1855. On the other hand, there will necessarily be more care of slaves, more attention to breeding among them, and fewer manumissions. But as regards breeding, there is the strong prejudice of the slave women against bringing up their children to be slaves to contend with, which leads to abortions, infanticides, and large mortality among slave children from neglect.

It is calculated that there are under the control of the Brazilian

Government about 10,000 free Africans (including progeny) who have been rescued in former years from slavers by British cruisers, and confided to the care of the Brazilian Government under the provisions of the Slave Trade Treaty with Brazil, the Brazilian Government guaranteeing their freedom. The treatment of these free blacks has been for the last twenty years a subject of unpleasant correspondence between the English and Brazilian Governments; and these 10,000 free blacks are said to be kept in a state of virtual slavery. As late as the 8th January, 1863, Lord Russell remonstrated against the application of regulations to these free blacks which, he said, "practically consign to six years forced servitude, men, women, and children, who are free according to the showing of the Brazilian authorities themselves."

Commerce.

The values, sterling, of the imports and exports of Brazil for the year 1861-62, were, imports, about 12,376,000*l.*; exports, about 13,600,000*l.*

During the same financial year, 1861-62, the sterling value of the imports from Great Britain to Brazil amounted to about 5,918,646*l.*, and the value of the exports to Great Britain to about 6,127,718*l.*

The Brazilian import duties have since 1844 been placed on a general basis of 30 per cent. *ad valorem*. Treaties with Great Britain and other countries, limiting import duties to 15 per cent., expired in 1844.

Mr. Baillie's report of January, 1861, states "that after the expiration of all these treaties, Brazil introduced a general and highly restrictive tariff in 1844, by which an import duty of 30 per cent. was imposed on foreign goods in general, while on certain articles, duties were levied ranging from 2 to 50 per cent. *ad valorem*. The export duties remained as they had been fixed in 1835, viz., 17 per cent. on the most important Brazilian products, and from $\frac{1}{2}$ to 17 per cent. *ad valorem* on others."* In 1858 the excessive dearness of provisions led to a great reduction in the duties on the chief imported articles of food, dried fish, jerked beef from the River Plate, and wheat flour, which were reduced to 5 per cent. There was also at this time a reduction of one-half of the duties on the principal imported manufactures. In 1860 the import duties were increased from 2 to 5 per cent., and the export duties by 2 per cent., to bring increase of revenue.

The provincial Assemblies of Brazil are permitted to levy export duties. Thus in Pará, one of the northern provinces of Brazil, the export duties vary from 5 to 10 per cent., the most productive

* "Reports of Secretaries of Legation," No. 4, p. 461.

article being Indian rubber: the import duties vary from 18 to 80 per cent.

On the southern frontier of Brazil, near the River Plate States, a great deal of smuggling is carried on, which, according to the report of the Minister of Finance of 1860, is rapidly increasing. The duties imposed in the Brazilian port of Rio Grande are so much higher than those of Monte Video, that British manufactures passing the frontier of the River Plate States can be furnished to the interior of the province of Rio Grande do Sul, 20 per cent. cheaper than the regular merchant can afford to sell them. The Brazilian duties vary from 50 to 80 per cent. on the cost price in England.*

Long and vexatious formalities characterise the Custom House system of Brazil. Merchants must pay the Custom House agents if they wish to get easily through the multitudinous forms required in the ports of that country. Portuguese habits are retained in Brazil, and the same ordeal of health visits, police, and Custom House searchers is insisted upon before a passenger is allowed to leave his ship.

A long string of regulations is provided, and a ship master or merchant, who innocently contravenes them, is liable to heavy fines, and even confiscation of the ship, or its property, although there has been no fraudulent intention.†

All the foreign trade with Europe and the United States is conducted in foreign vessels, the Brazilian vessels confining themselves to coasting voyages and to the River Plate.

The following are the number of vessels, tonnage, and crews which entered and left the Brazilian ports in 1861-62 on foreign voyages:—

	Entries.	Departures.
<i>National—</i>		
Vessels	190	126
Tons	31,308	29,129
Crews	1,719	1,365
<i>Foreign—</i>		
Vessels	2,572	2,463
Tons	904,936	1,023,402
Crews	41,542	41,158
<i>Total—</i>		
Vessels	2,762	2,589
Tons	941,244	1,052,531
Crews	43,261	42,523

* "Reports of Secretaries of Legation," No. 4, p. 461.

† "William Hadfield's Brazil," London, 1854, p. 157.

The following are the numbers of vessels and tonnage of the coasting trade for 1861-62 :—

	Entries.	Departures.
Vessels	3,308	3,062
Tons	232,587	621,569

Productions.

Coffee, sugar, cotton, and tobacco, constitute the principal productions of Brazil; as well as India rubber, Paraguay tea, rum, and cocoa.

During five years, 1852-57, the annual average value of the exports of these products was as follows :—

	Milreis.	£
Coffee	43,990,620	= 4,948,945
Sugar	20,099,740	,, 2,261,220
Cotton	5,518,850	,, 620,871
Tobacco	2,162,200	,, 243,247
India rubber	2,336,780	,, 262,888
Paraguay tea	1,335,684	,, 150,264
Rum	943,887	,, 106,186
Cocoa	758,472	,, 85,328

The quality of Brazilian cotton greatly deteriorated some years ago from want of care, and from the mixture of inferior qualities with the finest descriptions of that product.

During the Civil War in the United States of America, Brazilian cotton has obtained an important position, being regarded as similar, for fine numbers, to the cotton of New Orleans and Texas. A remarkable increase in the export of gold and silver bullion from Great Britain to Brazil has taken place during the American war; the value of these exports being—

	Exports of Bullion from Great Britain to Brazil.
	£
In 1861	169,813
,, '62	452,392
,, '63	1,731,037

The estimate of the supply of cotton from Brazil for the year 1864, to different countries, is given in the “North American Review,” for April, 1864, as follows :—

Brazil.—Supply of Cotton for 1864.

Bales.	Average Weight.	Pounds Weight Avoirdupois.
155,000	180	27,900,000

The reviewer remarks, that there is a larger proportional supply of fine Egyptian and Brazilian cotton than of any other.

Paraguay tea is exported to the River Plate, where it is an habitual beverage in Buenos Ayres. The only Brazilian provinces which export it are those of Rio Grande do Sul and Parana.

Companies have been formed in Brazil for the purchase of articles of food, such as salt fish, wheat, flour, and fresh meat; and when there is no deficiency in the market, these articles are sold at high prices.

Tables of the average official prices of articles of food in Brazil, according to weekly returns, from 1850-51 to 1858-59, show that the seven principal articles of public consumption, viz., rice, sugar, dried meat, mandioca flour, beans, Indian corn, and bacon, have doubled in price in the eight years, 1850-51 to 1858-59, and since the population has not increased in so great a proportion during that time, nor the produce diminished, it is evident that the monopoly of these food companies must affect so extraordinary a rise in price.

Fresh meat has also risen enormously in price, notwithstanding that the breeding of cattle and pigs has undergone no diminution. The trade in dried meat has diminished, whilst the prices have increased, notwithstanding a reduction in the import duties on this article.

*Revenue and Expenditure.**

The Minister of Finance estimates the receipts for the financial year, 1864-65, at 51,000,000\$000, fifty-one millions of milreis (thousand reis). The value of the milreis in English money constantly fluctuates; it is at present a little above 2s. 3*d.*, but in this paper it has been calculated always at that value, 27*d.* The estimated revenue, therefore, for 1864-65, is about 5,737,500*l.* The expenditure estimated for 1864-65 is 57,846,407\$766 or about 6,504,720*l.*

We may say, roughly, that the estimated revenue for 1864-65 is 5 $\frac{3}{4}$ millions sterling; and the estimated expenditure 6 $\frac{1}{2}$ millions, showing a deficiency of three-quarters of a million. In addition to the 51,000,000 milreis revenue, there is an estimate of Government deposits to the amount of 3,340,854 milreis, or about 375,846*l.*, which may be used in aid of revenue, but which will of course be strictly a debt.

In the financial year, 1861-62, the revenue was higher than any previous year, and reached the sum of 52,078,085 milreis, exclusive of deposits. This amount has not since been attained. The Finance Minister had calculated 51 $\frac{1}{2}$ millions of milreis of receipts for 1863-64, with a surplus of 470,946\$362. But this estimate has

* The following particulars about revenue are taken from the "Annual Report of the Minister of Finance," presented to the Legislative Assembly in May, 1863.

proved fallacious, and instead of a surplus there is a deficit; and another deficit is announced for the coming year, 1864-65. Up to the year 1856-57, the revenue annually exceeded the expenditure, but since then it has been constantly the other way, even in the year 1861-62, when the revenue reached its highest point. In 1860 a Committee of the Chamber of Deputies reported an accumulation of deficits for the end of the financial year, 1862-63, estimated at 10 millions of milreis (1,125,000*l.*), and the Legislature authorized the issue of treasury bills to the extent of 8 millions of milreis. At the same time the customs and export duties were increased. According to Mr. Baillie, the Secretary of Legation at Rio de Janeiro, in his reports on the commerce and finance of Brazil, laid before Parliament, the annual estimates of expenditure never include everything, and are always exceeded, and the deficits are probably understated.* Loans raised by the Brazilian Government during the last year, 1863, to the extent of four millions sterling, have cleared off the treasury bills issued under the authorization of 1860, and all deficit up to the end of 1863, and added to the permanent national debt. The Minister of Finance, in his annual report of 1863, urgently invites the Legislature to provide for future equalization of revenue and expenditure by economy or new taxes.

The chief item of revenue is customs' duties, more than half of the estimate for 1864-65, viz., 29,650,000*l.*, or about 3,335,625*l.* The export duties amount to 7,759,576*l.*, or about 872,552*l.*; that is, the import duties amount to about 3½ millions sterling, and the export duties not quite 900,000*l.*

The expenditure is distributed as follows among the different ministries:—

Ministry of the empire or interior	4,781,494 <i>l.</i> 730
„ justice	3,209,595 <i>l.</i> 835
„ foreign affairs (.....	767,430 <i>l.</i> 553
„ marine	7,752,091 <i>l.</i> 920
„ war	13,206,274 <i>l.</i> 349
„ finance	19,131,198 <i>l.</i> 512
„ agriculture, commerce, and public works	8,998,321 <i>l.</i> 867

The estimate for the ministry of the empire includes the allowance to the Emperor (800,000 milreis, or about 90,000*l.*), Empress (96,000 milreis, or about 10,900*l.*), and the other members of the imperial family, the ministers, council of state, presidents of the provinces, senators (275,550 milreis, or about 31,000*l.*), and deputies (410,480 milreis, or about 40,174*l.*) The chief part of the estimate for the ministry of foreign affairs, is for the diplomatic and

* “Reports of Her Majesty's Secretaries of Legation,” &c., No. 5, presented 1862, pp. 84 and 258.

consular services, the whole expense of which is 597,430 milreis (or about 63,210*l.*). The estimate for the ministry of finance, includes the interest on national debt and sinking fund payments.

There has been a very great increase both of revenue and annual expenditure of late years. Compare the estimates for 1864-65 with the revenue and expenditure of 1855-56 :—

	Revenue.	Expenditure.
1855-56	38,634,356 <i>£</i>	40,242,648 <i>£</i>
'64-65	51,000,000 <i>£</i>	57,846,407 <i>£</i>

In the year 1848-58, the revenue was little more than 25 millions of milreis, so that it has more than doubled since. The expenditure for the year 1844-45, was 25,458,230*£*334.*

The national debt of Brazil may be roughly stated at about 21 or 22 millions sterling. It is made up as follows, as shown by the last annual report of the Minister of Finance :—

		£
Foreign debt, up to 31st December, 1862	—	7,205,000
National funded debt „	69,658,000 <i>£</i> 000	7,836,525
In Great Book	137,553 <i>£</i> 445	15,413
In provinces (not in Great Book)	220,477 <i>£</i> 323	24,804
Debt anterior to 1827 (not inscribed)	108,743 <i>£</i> 139	12,234
Treasury bills to 30th April, 1863	6,576,000 <i>£</i> 000	738,800
Government paper money in circulation, March, 1863	35,340,469 <i>£</i> 000	3,975,802
Public deposits	1,767,345 <i>£</i> 521	198,826
Orphans' fund	9,161,904 <i>£</i> 342	1,029,464
Dead and absentees' fund	3,056,698 <i>£</i> 716	342,878
Passive debt	1,473,177 <i>£</i> 105	165,627
		<u>21,545,373</u>

Since this estimate was published, a loan of 3,300,000*l.* has been raised in England, and another of 600,000*l.* in Rio de Janeiro: total, 3,900,000*l.* But with these loans 2,855,500*l.* of the foreign debt and the 738,800*l.* of treasury bills are to be paid off; total, 3,544,300*l.*, so that there will be only an increase of 306,700*l.* to the national debt, which may be estimated roughly at 22 millions sterling.

In addition to this debt, liabilities of the Brazilian Government by guarantees of interest to railway undertakings, should be mentioned. There are guarantees of 7 per cent. interest (5 per cent. guaranteed by the imperial Government and 2 per cent. by the

* Mr. Baillie's report, July, 1861, "Reports of Secretaries of Legation," No. 5, p. 83.

respective provincial Governments) on the following amounts of capital for the following undertakings :—

	£
Don Pedro II railway (in province of Rio de Janeiro)....	3,000,000
Pernambuco ,, 	1,200,000
Bahia ,, 	1,800,000
San Paolo ,, 	2,000,000
	<hr/>
	8,000,000
	<hr/>

The imperial Government have therefore guaranteed for these useful public undertakings 5 per cent. on 8 millions sterling, or 400,000*l.* a-year. These guarantees of 7 per cent. are of course not guarantees of interest to the shareholders, irrespective of profit or loss in working the railways; loss in working has first to be provided for out of the 7 per cent. guaranteed.

PRICE of EDIBLES and POTABLES in A.D. 1506. By COLONEL
W. H. SYKES, M.P., F.R.S., *President of the Statistical Society.*

[Read before the Statistical Society, 15th December, 1863.]

I AM indebted to the Master of the Salters' Company, Alderman Gibbons, who obligingly acquiesced in my application for a copy of a bill of fare, with prices and quantities attached, of a dinner for fifty members of the Salters' Company in 1506, three years after the true English shillings were first coined, before which the Saxon shilling was 5*d.* and then 4*d.*, and the Normans introduced a nominal shilling of 12*d.*; and three years after Henry VIII married Catherine of Arragon, and fourteen years before the interview of Henry and Francis I at the Field of the Cloth of Gold on the 31st May, 1520. It was plainly a very modest feed, which their successors of the present day would inevitably eschew, for the whole cost of the dinner for fifty people was just 1*l.* 13*s.* 2*d.*, or about 7 $\frac{3}{4}$ *d.*, say 8*d.*, per head, or one-fifteenth of what the members of the Statistical Club pay for their dinner without wine, and one-sixtieth or one-ninetieth of a public or corporation dinner with wines. But the bill of fare tells us of something more than of the frugal habits of the worthy Salters,—it tells us of the marvellously contrasted relations between prices and provender in 1506 and 1863. It tells us also of the feelings of the age with respect to the constituents of a grand civic dinner, suitable to the dignity of a City Company; for we find perfumes were used, at the cost of 2*d.*, and the vessels were garnished at the cost of 3*d.* But the dignity of the entertainment seems to have been indicated by the most costly item in the bill of fare, namely, one *swan* and four geese, 7*s.* Now as there were twelve pence to a shilling in those days as now, although only nine pence to an Irish shilling, consequently the average cost was 16 $\frac{8}{10}$ *d.*; but we may fairly consider the noble swan estimated at half-a-dozen geese, which might make the cost of the dish of the swan nearly one-sixth the cost of the whole dinner. Evidently the tastes and the teeth of the gastronomers of the day must have been very different from those of us degenerate moderns, or they must have found the mastication of the noble bird, supposing him to have attained a mature age, but poorly compensated by the dignity of the display, great as it must have been if the price of the bird be a standard of comparison with the price of the poor chickens (to us degenerates modern objects of luxury), thirty-six of which were put

upon the table for 4s. 6d., or one penny halfpenny each; for which, alas, in these days, notable housewives have to pay from 24 pence to 60 pence each; and the bill of fare tells us that fifty eggs cost *two pence*. Those were days for rich custards and puddings, one feature of what was thought necessary in John Bull's repast before the introduction of French cookery is wanting; there are no massive joints, no sirloins of beef, no haunches, saddles, or legs of mutton, and no pork joints at all, the only contributions from quadrupeds being two rumps of beef tails and four breasts of veal, and nine rabbits, the latter costing 7 farthings each. There is a total absence of fish, which would seem to imply there was not a fish market, or that the supply was scanty and dear, although the Fishmongers, one of the great and wealthy companies of London, date from 1384, or 122 years before the date of the dinner. Six quails cost 3d. each, an extravagant price compared with the chickens. The potables were limited to a kilderkin of ale, $3\frac{1}{2}$ gallons of Gascoigne wine, and a solitary bottle of sweet Muscovadine; as the kilderkin contained 18 gallons, or 72 quarts, the lieges needed within a fraction of $1\frac{1}{2}$ quarts each, at $1\frac{2}{14}$ d. per quart, to wash down the probably tough swan; and the tarts and 4 gallons of curds, at a penny a gallon, and $1\frac{1}{2}$ lb. of comfits at 2d., were associated with the consumption of rather more than a pint of wine per head, at $1\frac{1}{14}$ d. per pint; although the Cape of Good Hope had only been passed eleven years before the date of the dinner, and the West Indies discovered only fourteen years before, the scarcer and costly products of tropical India found their way to the Salters' table; the contributions, no doubt, of the overland trade carried on by the Venetians. There are 2 oz. of pepper, at 2d., from the Malabar Coast, and 2 oz. of cloves and mace, at 4d., from the Moluccas; 3 lbs. of sugar, at 8d., must have come from India; dates from Arabia or Morocco, and raisins from Spain or Turkey,—testifying to England participating, in Henry VII's day, in the trade with remote regions,—but little contemplating its expansion to 335 millions in 1863. The Salters' bill of fare has no charge for the article of salt, and there are no apples and, of course, no potatoes. The worthy Salters did not confine their enjoyments to the gastric regions, but incurred the expense of 2d. to perfume their persons or the atmosphere of their hall; nor did they omit a manifestation of their taste in *garnishing* the vessels at the cost of 3d. Evidently the services of the cook were estimated in a disproportionate ratio to the total cost of the dinner, for the remuneration of 3s. 6d. was nearly one-tenth of the total expense; but whether his skill was manifested in a "premier service" entrées, relevé, and entremets, as at the dinner at the Salters' Hall of which I had the gratification of partaking, on the 18th November, 1863, the bill of fare of 1506 does not enlighten us.

Water was a marketable commodity, for 3*d.* was paid for the supply for the cooking. Our coal-fields were then contributing fuel, for 4*d.* was expended for a quarter of a load, but what that load weighed, whether so many cwts., or a cart load, or a chaldron, or any other quantity, the bill of fare does not say. Finally, the bill of fare does not enlighten us about toasts and speeches, characteristics of modern public dinners. Possibly our ancestors were too simple minded to attempt to win applause by addresses which too frequently sacrifice truth to rhetorical display and conventualities.

A Bill of Fare for Fifty People of the Company of Salters, A.D. 1506.

	£	s.	d.
36 chickens	—	4	5
1 swan and 4 geese	—	7	—
9 rabbits	—	1	4
2 rumps of beef tails	—	—	2
6 quails	—	1	6
2 oz. pepper	—	—	2
2 „ cloves and mace	—	—	4
1½ „ saffron	—	—	6
3 lbs. sugar	—	—	8
2 „ raisins	—	—	4
1 lb. dates	—	—	4
1½ „ comfits	—	—	2
Half hundred eggs	—	—	2
4 gallons of curds	—	—	4
1 gallon gooseberries	—	—	2
Bread	—	1	1
1 kilderkin of ale, 18 gallons beer measure	—	2	3
Herbs	—	1	—
2 dishes of butter	—	—	4
4 breasts of veal	—	1	5
Bacon	—	—	6
Quarter load of coals	—	—	4
Fagots	—	—	2
3½ gallons of Gascoigne wine	—	2	4
1 bottle Muscovadine	—	—	8
Cherries and tarts	—	—	8
Verjuice and vinegar	—	—	2
Paid the cook	—	3	4
Perfume	—	—	2
1 bushel and a half of meal	—	—	8
Water	—	—	3
Garnishing the vessels	—	—	3
	1	13	2

MISCELLANEA.

CONTENTS:

	PAGE		PAGE
I.—Statistics of Educational Results	261	IV.—Cost of the English Census .	274
II.—Census of Religious Sects in Victoria	266	V.—Bank Rate of Discount from 1844 to 1864.....	274
III.—Why India is in the State it is	268	VI.—Agricultural Statistics	276

I.—*Statistics of Educational Results.* By EDWIN CHADWICK, C.B.*

MUCH of the scepticism prevalent as to the power and value of popular education arises from the inability of the educationist, or of the school teacher, to adduce satisfactory statistical evidence of the moral or of the intellectual results from any special courses of instruction or training, as manifested in after life. From the most advanced schools the pupils are discharged and sent abroad amidst the crowds of large towns; and the closely occupied school teacher usually only sees or hears of the careers of a few of them casually. From the loose observations of the few, he draws his own conclusions. Whether the majority have done well or ill, he cannot, when cross-examined, pretend to answer. How they are distinguished from others who have been under an educational course different from his own, he cannot tell. On the other hand, from conspicuous instances of moral or intellectual failures, generally exceptional, parties, particularly members of Parliament, draw inferences adverse to popular elementary education.

In poor-law administration I found it to be important to obtain more certain and complete information than had hitherto been obtained, of the moral as well as the intellectual results of training and education. I adopted, as a rude practical test of moral results, the fact of a child getting into a place and keeping it for a year. In a large proportion of the town parishes, not above one-third of the children so tested were found in conditions of self-supporting or respectable industry. In order to ascertain the results of particular methods of instruction, I got in some parishes circular letters sent to the employers of children, requesting answers to questions as to their experience of them, and as to any defaults attributable to education or training for which remedies were needed. Few answers were got that could be depended upon. Many of the employers were themselves ill educated, and incapable of giving proper answers. I then got several of the new union chaplains to make house-to-house visits to the employers of the children, to make the requisite inquiries from them. These first visits of the chaplains to the employers of the orphan or destitute female children, sometimes led them into common brothels and terrible haunts of vice, to which the poor children had been allowed to be taken without inquiry, and places where clergy-

* From the *Museum*, a quarterly journal of education. Edinburgh: Gordon.

men had never before been seen. Then it was made more apparent, that there were common conditions of domestic service in which the efforts of all moral or religious instruction must be destroyed,—places where a poor employer, the master and the mistress, with the male apprentice as well as the young girl, were crowded together in one sleeping-room,—places in beer-shops and common lodging-houses. Then, again, it was made more clear, in respect to the parish apprentices of good intellectual training, that, their physical training having been neglected, they were physically inapt for the work to which they were put, or incapable of it, or were maltreated for their presumed unwillingness, and ran away. The ignorant and irresponsible local administrators of the local self-governments, in their impatience to be rid of burdens, took any offers for the service of the children, and hence created additional burdens from a delinquent as well as a pauper population. The immediate results of these house-to-house visitations and examinations, beyond the possible care of the school teacher, was to impress upon the guardians the necessity of exercising care to obtain fit places for children, as well as to modify the training, so as to prepare the children for suitable occupations. Rules have in many instances been framed for these purposes, and in well administered district schools the house-to-house visitation of the children, at their places of work or of habitation, is provided for as a regular and responsible service. In some instances the new duties have been devolved upon an officer of the class of a relieving officer. But more inferior appointments ought to be prevented by positive regulation. The service is one which, for secular purposes alone, requires a high amount of discretion and moral influence, which is given by education and position such as is only available from amongst the clergy. The clergyman's office and position are specially important for the moral support of lonely orphan children. Viewed administratively, however, I have to submit this service of house-to-house visitation as a proper audit of public educational institutions, and as an important means of testing and advancing their efficiency. I found great differences in results from the teaching in different schools where the subject-matters taught are alike, but where the conditions and manners of the teachers were different. These differences strongly impressed me with the importance which such an order would enforce of having well-mannered persons as teachers.

The regular topics of inquiry with which such an officer should be charged, would be from the employed as well as the employer, as to the school instruction, "Which portions of it (to use the phrase in the competitive schools) are found practically to *pay* the best? What additions or variations are needed for the service, or for the happiness of the individual taught? What of the book instruction is found to have been useless, or a mere waste of time, or, to use the school slang, has been mere *rot*, that ought to have been cut away?" And he should report accordingly. The benefits derivable from such a system of visitation—less of the schools themselves than of the domiciles of those who have been brought up in them—are great. From those already instituted in connection with the district half-time poor-law schools in England, there are now derivable educational

statistics, founded on the house-to-house visitations, of a new value to determine the results of educational and training power.

These district schools may be considered as being to some extent children's hospitals, into which are received the most enfeebled and physically deteriorated and wretched of the population. They contain a large proportion of scrofulous, idiotic and partially idiotic, deaf and dumb, and bodily disabled children. The law of England does not yet protect the children of profligate parents from the exercise of authority by those parents, or prevent the prostitute mother from claiming her daughter at the age of puberty, and taking her to live in her own haunts, and out of the reach of after visitation and influence. Eliminating such cases, taking the cases of what are called pure orphans, it appears on statistical returns, tested by the requisite house-to-house visitation, that of those who can be accounted for as in good, respectable, self-supporting service, the moral failures by misconduct amounting to a disqualification for such service, are reduced to about 2 per cent. Another source of valuable statistical evidence of educational and training power is afforded by the administration of the public schools maintained for children educated for the army and for the navy, and by the returns from responsible military and naval officers as to the conduct in the regiments or on shipboard of those so trained and educated. Some of the most interesting and important of the educational statistics, and the best methods of registering the facts for those statistics that I have met with, are those devised and conducted by the Rev. George Fisher, the Principal of the Greenwich Hospital School. Some foreign commissioners of education to whom I have shown them have expressed their concurrence with me as to their practical value. I beg to be permitted to draw attention in the *Museum* to his statement of them to me, as also his answers as to the results, inasmuch as I did not obtain them in time for their being submitted to Parliament with the other educational evidence collected by me.

The Rev. George Fisher, Principal of the Greenwich Hospital School.

What is the present number of the pupils of your school? Eight hundred. Of what class are they?—They may perhaps be best described in the words of Mr. Canon Mosely, who reported on them, that the great majority of them are the sons of sailors; that they have not unfrequently passed their previous lives amongst the lowest haunts of a seafaring population, and they come to the institution “at an age (about eleven), when the influence of evil example has already begun to acquire some hold upon them, and the evil habits has begun to be felt.” He says, “My object is simply to show what a school composed of such children becomes when the standard of education is low, and what when it is high.”

What were the intellectual results before the commencement of the new course of tuition?—We had no record of results, and it was to supply the deficiency that the numerical method was devised by me. The teaching was of a very inferior character. The elementary subjects were confined to reading, a little grammar, church catechism, and writing taught only to the first-class, and carried out on the monitorial system of Bell. There were then only two masters to

400 children. What are now the subject-matters taught?—Reading, spelling, writing, ciphering, mathematics, grammar, and composition; general history, French, drawing, and practical science, including mechanics, steam machinery, and hydrostatics, and the common experiments in natural philosophy. There are now 16 masters to 800 boys, and there are also 16 pupil teachers.

Are the boys of the same class as before?—Just the same. What were the moral results obtained formerly, as set forth in general descriptions?—Mr. Canon Mosely, who inspected the school at that time states, in 1842, that the infliction of corporal punishments was very frequent, that is, by the birch, for offences out of school as well as in school; and for out-door offences the punishments were confinement by the leg by a chain and padlock fixed to a hammock stanchion, and confinement of the arms by a straight waistcoat. The number of punishments administered in respect to offences committed out of school between Midsummer 1842 and the following Christmas was 120, of which 67 were corporal punishments, and 37 of the number for the offences of absconding over the school walls.

What is the present state of things, as denoted by your record of punishments?—Mr. Canon Mosely, in 1845, reported, as one effect of an improved moral and intellectual treatment of the boys, that the offences requiring punishment had considerably diminished. Accurate statistics of the moral conduct of boys were begun only in 1850; and the progress will be seen by the red line marked “character,” and it will be seen that it rises with the intellectual attainments. I consider that the former excessive punishments were one exciting cause of evil. The occasion for punishment in the present state of the school may be denoted by our last year’s returns, where, out of 800 children, and for the entire year, the number discharged for various offences was 11; and the corporal punishments for the same period were, for out-school misconduct 35, and those not severe; and for in-school misconduct 15. These punishments, as will be seen by Mr. Canon Mosely’s returns, are a small fraction of the former punishments.

What was the former economical result of the education as displayed in the “ship character” and conduct of the boys?—The general result may be stated to have been indifferent; but we have no early records to enable the result to be stated statistically. Formerly, the character of Greenwich boys amongst seamen was bad; the boys were unsteady, intractable, and troublesome, and frequently ran away. Now, the reported character of the Greenwich boy is the reverse. Thus, the late Captain Sir Everard Home reported, “There is a remarkable style of character in all the Greenwich boys whom I have seen, differing from others—a steady, firm, respectful, manly deportment, not often met with, entirely the effect of discipline and self-possession.” Mr. Canon Mosely reports, as the results of official inquiries from commanders, that “it is a fact worthy of observation, that lest it should render them dissatisfied with those hardships, and so long as a low standard of education was affixed to the education of the boys of the Greenwich School, they ran away from their ships, and that now, when it is fixed at a high standard,

they are not dissatisfied with them; they do not run away from their ships, are more steady, as it is termed, than other boys." The statistical abstract of the ship characters of boys, received from the Admiralty, from July, 1861, to 30th June, 1862, is, of 150 boys, as follows: "Very good, eighty-eight;" "good, forty;" "fair, promising, nine;" "indifferent, lazy, troublesome, two;" "dishonest, one,"—this lad appropriated to his own use some wine belonging to the sick. As to ten, no reports have been received; probably because, on account of the transference from ship to ship, there was no time to give any.

The Royal Military Asylum, Chelsea, for the children of soldiers, which is a school of mixed physical and mental training, may be presented as another example of educational power and economy in result. In the investigation of the sources of juvenile delinquents, one common answer was, "father a soldier," or "a sailor;" "mother dead," or "mother unable to maintain him;" "deserted;" and there cannot be a doubt that, in the absence of any case of provision for that class of children, the great mass of them must be economically total losses of capital. The following are the results of the returns of their character from the commanding officers of the regiments they have joined:—Out of 376 children, 87 were returned as exemplary; 261 as good; 23 as indifferent; and only 5 as bad. But equally important is the evidence of the increased value given to the children by good training (including the physical as well as the mental training), as displayed in the ranks attained by a large proportion of the children, and those ranks denoting the increased value which may be imparted by improved training. Twelve were staff-sergeants, 25 sergeants, 32 corporals, 95 trumpeters or drummers, and 210 privates. Out of this school 17 had become commissioned officers. I attach much importance to schools of this description, as imparting with the physical training those moral virtues, or, speaking economically, those values implied in the terms discipline, attention, prompt and exact obedience, patience, self-restraint, so important for productive applications. I am glad to state that his Royal Highness the Duke of Cambridge and the Council of Military Education are in advance in educational improvement, as they have ordered a reduction of the hours of sedentary application to an average of about three hours daily. Mr. Macleod, the head-master, assured us, on a recent visit with foreign commissioners, that this reduction has been unattended with any reduction of the amount of mental attainment within the same periods in weeks or months. I need not dwell on the vindication of educational and training power afforded by such facts. It were of importance that the results of educational expenditure on the public institutions should be regularly presented, as upon an annual audit, for the satisfaction of those locally interested in them, as well as for the public at large and the members of the Legislature. The cases of failure of "the indifferent," "the lazy," "the bad," and "the dishonest," which are so often the conspicuous cases, and held forth as examples of the general results, would be cases reserved for regular inquiry, as cases of shipwreck, to ascertain the conditions under which they originated, and as to the means of preventing them. Hence the audit of

educational results, tested by sound statistical returns, would, under a proper system of local and general educational administration, become practical means of great moral as well as intellectual advancement.

II.—*Census of Religious Sects in Victoria.*

THE following interesting article, which appeared in the *Melbourne Argus* of the 2nd February last, shows that the colonists of Victoria achieved at their recent census what we at home only partially accomplished for the United Kingdom in the enumeration of 1861. A classification of the people according to religious denomination was, upon that occasion, effected for Ireland; but a proposal to obtain similar information with respect to Great Britain, unfortunately failed.

“ When the Census Act for 1861 was before Parliament, some lively discussions took place with regard to the column in the enumeration schedules headed ‘Religion.’ Whether that column should be altogether omitted, whether it should be compulsory upon the householder to fill it up, or whether he should have the option of declining to do so, were questions eagerly debated in the Legislative Assembly. One honourable member expressed his belief that ‘any attempt to census the people in a religious aspect would be attended by failure;’ another ‘was informed that all the Nonconformists in the colony objected to the column;’ and a third was opposed to the column, because the distribution of the grant for public worship depended upon the figures contained in it. Unfortunately for these sagacious legislators, ‘the inexorable logic of facts’ has proved to be against them; their prescience, their information, and their good taste are all injuriously affected by the results of the inquiry. The people of Victoria generally, and the Nonconformist sects in particular, have been found to possess more good sense, enlightenment, and honesty, than their rulers gave them credit for. The attempt to enumerate the people by religions has not been attended by failure, but, on the contrary, has proved a great success, although this was the first attempt to obtain the information voluntarily. The Nonconformists have shown that they can fully appreciate the value of accurate statistics of religions, by returning their numbers almost to a man. And, strange as such conduct may appear to hon. legislators, the people as a body have refused, for the sake of a few pounds more or less of the public money, to perjure themselves on the subject of their religious faith.

“ The fourth part of the census of 1861, comprising the religions of the people, has just been presented to Parliament by the registrar-general. This document shows that the total population enumerated on the census night was 540,322; that of this number only 17,930 individuals objected, on ‘conscientious grounds,’ to state their religion; and that after deducting these there remained 522,392 persons who complied with the requirements of the act. Of this number 381,113 were Protestants of all denominations, 109,829 were Roman Catholics, 2,903 were Jews, and the remaining 46,477 embraced all other sects, persons of no religion, and those whose religions were not specified. It thus appears that seven-tenths of the population of the colony are Protestants of one kind or another, one-fifth are Roman Catholics, one person in every 186 is a Jew, and rather less than a twelfth comprises the miscellaneous remainder. The union of all the Protestant sects gives them a very imposing appearance in these returns; thus combined they overshadow by their superior numbers all the other denominations; but unfortunately this unity is but a pleasing fiction, invented by Mr. Archer for the sake of statistical symmetry. They are, in reality, divided and subdivided into sects, connexions, and churches without number. The most prominent bodies among them are the members of the

Church of England, Presbyterians, and Wesleyans. The first of these sects numbered 212,068 persons, or 39 per cent. of the whole population; the second, 87,103, or 16 per cent.; and the third 46,511, or nearly 9 per cent. Then there are 12,777 Independents or Congregationalists, 9,001 Baptists, 10,043 Lutherans and German Protestants, 1,430 Unitarians, 273 Quakers, and 650 Calvinists and Calvinistic Methodists. Among the minor sects, and what may be called the "fancy" religions, are 7 Glassites, 5 Huguenots, 5 Spiritualists, 198 Swedenborgians, and 108 Mormons. We are also favoured with the presence amongst us of 189 Mahomedans, 1,672 Pagans (not Chinese), 24,551 Chinese not professing Christianity, and 441 persons of no religion.

"The shepherds who have the tending of all these sheep are variously proportioned to their flocks. The members of the Church of England and the Roman Catholics are the worst situated in this respect; amongst the former there is only one clergyman to every 2,613 members, and amongst the latter one to every 2,615 members; while the Presbyterians have one minister to every 1,049 souls, and the Wesleyans one to every 694 souls. The relative proportions of the sexes professing the different religions are also curiously dissimilar. The Mormons, who might be expected to have the greatest number of females, have in reality the least—the proportion amongst them being 20 females to 100 males. As regards the larger religious bodies, the Roman Catholics and the Wesleyans have the greatest number of female votaries in their ranks, and the Church of England the least. The two former number 84 and 82 females respectively to every 100 males, while the latter has only 66 to 100, or one more than the proportion amongst the whole population of the colony. The distribution of the religious sects over the colony is another portion of the inquiry which is not without interest. A separation of the population into urban and rural, shows that Protestants—with the exception of the Presbyterians—Jews, and those who object to state their religion, are principally congregated in the towns; but the Presbyterians, the Roman Catholics, and the residue of nondescripts, are more numerous in country districts. On the gold fields, the Wesleyans are relatively more numerous, in proportion to their population, than the whole body is to the entire population of the colony. Members of the Church of England, Roman Catholics, Presbyterians, and Jews, are proportionately less numerous on the gold-fields than in the colony generally.

"The relative increase of the principal religious bodies, between the censuses of 1857 and 1861, is a very important part of this subject. According to the returns now before us, the Protestant denominations had increased by 83,934, or 28 per cent.; while the Catholics had augmented their numbers by 32,478, or 42 per cent. Taking some of the chief Protestant sects separately, we find an increase of 21 per cent. in the Church of England, 32 per cent. in the Presbyterians, and 64 per cent. in the Wesleyans. Thus the Roman Catholics are adding much more largely to their numbers than either of the principal Protestant sects, with the exception of the Wesleyans. Though numerically inferior to the Protestant denominations as a whole, and the Church of England separately, the Roman Catholic community largely outnumbers the other Protestant sects, and is increasing at such a rate as bids fair to place it, ere long, at the head of the churches in Victoria.

"Turning to the census of New South Wales for 1861, it may be useful to compare together some of the more prominent religious statistics of the two colonies. With a total population of 350,860 persons in that colony, 159,958, or nearly 46 per cent., are members of the Church of England; 99,193, or 28 per cent., are Roman Catholics; 34,692, or close on 10 per cent., are Presbyterians; and 23,682, or nearly 7 per cent., are Wesleyans and Primitive Methodists. In Victoria, therefore, we have nearly 7 per cent. fewer members of the Church of England, and 8 per cent. fewer Roman Catholics; but 6 per cent. more Presbyterians, and 2 per cent. more Wesleyans. The augmentation in the more prominent sects in New South Wales, in the interval between the censuses of 1856 and 1861, shows an increase in the Church of England of 28 per cent.; in the Roman Catholics, 34 per cent.; in the Presbyterians, 35 per cent.;

and the Wesleyans, 58 per cent. These results are closely approximative to those for Victoria, but the Church of England and the Presbyterian bodies increased more largely in the former than the latter colony, while the Roman Catholics and the Wesleyans augmented more rapidly in the latter than the former.”

III.—*Why India is in the State it is.*

THE following article, containing some very important statistics illustrative of the present financial condition of our Indian Empire, is taken from the *Economist* of the 21st May.

“Sir C. Trevelyan’s Budget is a dry but business-like document. We have still to complain that we only get actual accounts of realities down to the 30th April, 1863—the spring that is of last year. Nevertheless it appears that there is less of estimate than there used to be in the accounts of 1863-64, and so we suppose we must be satisfied. The satisfactory condition of Indian finance—a condition so satisfactory that no one in Europe now much thinks about it—is evident from the tables appended to this article. From them it appears that—

	£
The actual realized revenue of 1862-63 was.....	45,143,752
The actual expenditure	43,316,407
Surplus	<u>1,827,345</u>

And after the reductions of the revenue last year proposed, it is estimated that

	1863-64.	1864-65.
	£	£
The revenue will be	44,753,500	46,163,870
„ expenditure.....	44,721,971	45,340,582
Surplus.....	31,529	823,288

and this, after allowing for a great depreciation of opium, and the effects of a commercial crisis.

“Sir C. Trevelyan proposes but few alterations this year, and we give elsewhere in his own words his changes in the tariff which alone are of European importance. We do not think he is right in proposing in any form an augmented duty on piece goods in the present state of India. It is, we believe, most desirable to encourage the Indian consumption of English manufactures, and an augmentation of duty on them will necessarily impede their use. The theory of these duties is, undoubtedly, an *ad valorem* theory, and as the prices of piece goods have greatly risen, it is abstractedly desirable that the official valuation should be assimilated to that of the market. But when the result is an augmented charge on the very products which it is best India should use, we think theory should have stood aside for common sense. At any rate, if the valuations for duty were raised, the duty itself should have been lowered. The surplus of 823,000*l.*, a *secure* surplus, as Sir Charles confidently calls it, would be much more than enough for this reduction, and the aboli-

tion of the income tax, which is prognosticated next year, might have waited a little if necessary.

“ But the real interesting question raised by this and all other India financial statements is, why is India so prosperous? Sir Charles tells us that, independent of hypotheses and estimates, the actual revenue of

	£
1858-59 was	36,060,768
'59-60.....	39,705,822
'60-61.....	42,903,234
'61-62.....	43,829,472
'62-63.....	45,143,752

showing an increase of nine millions, or 25 per cent., a part of which is derived from augmented taxation, but a much larger part from improvement in old sources of revenue, and especially in the land revenue.

“ The truth is that in 1858-59, when we in England were most dismal about Indian finance, and when Mr. Wilson was sent from hence to reform it, India itself was in the very midst of a great industrial revolution. What the abstract political economists call the *efficiency* of her industry was being miraculously increased. They mean this: every nation has the power of producing some commodities or it could not keep itself alive; but many nations have but little power of producing articles desired by people in other nations, while a smaller number of other remarkable nations have a great natural facility, from some cause or other of climate, soil, or inherent character, of producing things usually coveted by the mass of mankind far away from their own homes. The people of Nova Zembla have, in this language, an inefficient industry, because they produce little which other people want; the people of China and those of England have, on the other hand, an efficient industry, because the Chinese, from the natural adaptation of their country to tea and silk, and the English, from industrial skill and habits, have a great power of producing what other people most want. A nation which easily produces desirable things is an *efficient* nation; a nation which does so with difficulty is an inefficient one.

“ Three great causes have within a very few years begun to change India from the second class into the first—to make it a very *efficient* country, while it used to be a very inefficient one. The first of these were the English railways: we have spent 50,000,000*l.* in making Indian labour go further than it used to do; next came the Russian war, which gave an enormous stimulus to the cultivation of Indian seeds, last the American war, which has given an enormously augmented value to Indian cotton. The combined effect of the three causes was this:—The Indian ryot found his seed and cotton enormously raised in value, he found that the rest of the world wanted them much more than heretofore, and at the same time the new railways gave him unthought of means of sending these products to the place where they were most wished for. The machinery of conveyance was indefinitely accelerated just when the desirability of the products conveyed was incalculably enhanced.

“ Sir C. Trevelyan gives some valuable figures, which indicate at a mere glance the wonderful sequence of these causes. The exports to India were

	£
1842-43.....	13,531,824
'52-53.....	20,464,633
'62-63.....	47,689,431

showing that the trade has much more than doubled in the last ten years, and nearly quadrupled in the last twenty. The recent augmentation is of course dependent on the increased *value* of cotton, as is proved by the following table, which shows that in the corresponding eleven months of the two last years the quantities of cotton exported only increased one-seventh, while the values nearly doubled:—

Raw Cotton Exported from Calcutta, Madras, and Bombay, in Eleven Months, from the beginning of May to the end of March, in 1862-63, and in 1863-64.

	1862-63.		1863-64.	
	Quantity.	Value.	Quantity.	Value.
	cwt.	£	cwt.	£
Calcutta	363,854	1,399,110	401,663	2,152,128
Madras	506,785	2,143,400	597,995	4,103,000
Bombay	3,010,563	13,256,807	3,325,463	25,177,690
	3,881,202	16,799,317	4,325,121	31,432,818

Note.—The return from Madras for March, 1864, does not include the exports from the out-ports.

But whether the cause be the augmented quantity produced or the augmented value, the effect on India is identical: she obtains a greater *purchasing power* over other countries; her industry is more effectual, for she can produce a greater quantity of what other nations wish for, covet, and require.

“The natural effect of this augmented industry is a great rise in the wages of labour. From a letter given in the appendix to Sir C. Trevelyan’s Budget, it appears that ‘the wages of unskilled labour twenty years ago were two annas per diem, or 3-12-ors per mensem. Agricultural labour, in districts at a distance from large towns and stations, was usually paid in grain, and perhaps a turban or a pair of shoes at the Dewali. The services of an unskilled field labourer could then have been obtained for about 24rs per annum. These prices continued till about twelve years ago, when the operations of the railway companies began to affect the labour market. From that time, the wages of labour have steadily increased, and unskilled labourers now receive from 4 to 7 annas per diem, or from 7-2-0 to 13-2-ors per month.’ Formerly, India was a country in which ‘man’s life was cheap,’ indefinitely and inconceivably cheap, when measured by a European standard; now, it ranges from 3s. 9d. a-week to 6s. 9d., which, though not high, is an approximation to what is seen and possible in Europe.

“In a country which was commercially active, and in which the industrial population was really intelligent, this augmentation of their earnings would be unmixedly beneficial. But it is not so in a country in which capital is deficient, in which it changes slowly from investment to investment, in which the population have as yet little aptitude for advancing wants. India is a country of this sort. The labourers have not spent their earnings in the best way; have to some extent, though not perhaps to so considerable an extent as is sometimes thought, hoarded the precious metals; they have spent the rest of their money in augmented food and other temporary necessities. In consequence there has been a great enhancement in the price of grain and other simple articles of necessary consumption,—in what we may call the cost of living,—which presses acutely on the classes of persons with small incomes and fixed incomes, and threatens to make it necessary to increase the salaries of civil servants, as the sole remedy for their enlarged expenses. In a country with *mobile* capital, the price in grain and other necessities would soon have been set right by an enlarged production of them. But in India there is little transferable capital, and the owners of what there is do not very readily or quickly alter its destination. And it so happened that just when the price of food was augmenting, the price of cotton and linseed augmented much more, and these larger augmentations being of course more tempting had attracted to themselves all the moveable Indian capital, and left very little applicable for an increased growth of grain and provisions.

“But the minor inconveniences of high prices to straitened Indian residents on fixed incomes, is a very unimportant consequence of the augmented Indian industry in comparison with others which have resulted from it.

“The *first* result of it has been the recent great augmentation of the revenue. It is impossible, under *any* system of taxation, that a country rapidly growing in industry and wealth should not yield to the State a largely increased revenue. Whatever pores you open, whether you tax directly or tax indirectly, the bigger stream will flow at once from the bigger reservoir. People who have large incomes will spend more and pay more to the indirect imposts of the State; they will pay more to the direct taxes, if there be any, in proportion to their increased wealth. In India, all sources of revenue have augmented,—the stamps, the import duties, and more than any, the land revenue. As fast as new ground is taken up for cultivation, and much new land appears to have been so broken up, new payments are made to the State; and the general doctrine that the State is the ultimate owner of the land, whatever its other defects may be (and we believe them to be very great), has this unquestionable advantage that it insures to the Government in the long run a large share of the enhanced annual value of land in the country. What the old school of civilians—men like Sir Charles Metcalfe,—calm reasoning, energetic men, well worthy of comparison with any statesman whom England has produced,—what these men deemed impossible for India, is now the actual financial state of India. She has an elastic revenue, which grows daily, from which you venture to take off taxes, to which you can venture to add taxes, which you increase to meet adversity, which you can diminish to enjoy prosperity. Twenty years ago this would not have been believed, and yet so it is. Such is the result upon the Government of a large increase in the efficient industry of the people.

“The second effect of this great agency has been less beneficial: it has caused a great demand for the precious metals. It is evident that doubling or trebling the wages of a country will cause an enormous demand for *actual* cash. Without singular facilities such a demand could not be supplied. The discoveries of gold in Australia and California have been beneficial to several countries in various regions, but to no country, perhaps so beneficial as India. Just when her industry has been productive, when the wages to be paid day by day have increased beyond example, an enormous addition was given to the wages-paying medium of the world, which enabled the new demand to be satisfied—which enabled the new wages to be paid, without infringing on the medium requisite for old wages—without abstracting the precious metals from their old accustomed sphere of usefulness. Dr. Lees, in a recent instructive work, ‘On the Drain of Gold to India and the East,’ has carried this a step further. He has shown very clearly that in a considerable part of India wages have been paid, not in gold or even in silver, but by barter. Over all such countries an increased, a diffused prosperity is rapidly introducing a metallic currency, and the annexations of the British Government, which always requires the rent of the land to be paid in money, actually tends in the same direction. Of course, too, much is hoarded. What can an uncivilised population, by unexpected and, to them, inexplicable good fortune, endowed with new wealth, be asked to do with their wealth, except to save it against an evil day? And if the peasant saves at all he will save in the only form an uneducated man understands, in actual *real* coin. First bring effectually home the recondite notion of an interest bearing security to the English agricultural labourer, before you attempt to explain it to a ryot in Nagpore or Berar.

“But we all know this vast Oriental demand for the precious metals has had, both in 1857 and now before our eyes, most important effects in the mercantile world. It has raised the rate of interest, it was an important co-operating force in causing one panic, but for better management it would have caused another panic. Such have been its effects in Europe; and in India just lately its effects have been more remarkable yet. Just when Europe was sending millions to Bombay and Calcutta, Bombay and Calcutta had themselves to send every rupee they possessed far into the interior, perhaps to pay new wages which had been paid in barter before, certainly to pay vastly augmented wages, to pay the price of the cotton to the peasant grower, to diffuse in a word the *money* in which India wished to *take out* its prosperity.

“Unfortunately this effect was coincident in time with another effect of the same great cause. Nothing is so dangerous as sudden prosperity. If enormous

profits are on an instant made in any place or in any trade, there is sure to be a rush of men—without money and without judgment, without industry and without knowledge—to that trade and that place. It is impossible to believe that the sudden and huge profits of industry in India should not have led to some baseless, some foolish, some mischievous speculation. Human nature must change its skin before pecuniary temptations of the first magnitude will cease to produce pecuniary excesses of corresponding greatness. The wonder is that the crisis in India has not exposed a far larger aggregate of bad business than it has.

“The point to be noted, however, is that just when the stock of the precious metals, the ultimate basis of credit in all countries (because credit *means* a *trusted* promise to pay gold and silver) was rapidly in course of being drained away by the demand of the ryot and interior population—by the enormous and sudden augmentation of monetary business in India,—at that very moment speculation was excited by enormous new gains, credit was enlarged to its utmost by every one who could obtain credit, enterprise was pushed to a vicious extreme by persons who used to be cautious, and quiet, and anxious. A sober respectable commercial community was changed into a feverish and excited one, just when the precious metals were ebbing out,—when the *fulcrum* of credit was becoming insecure,—when the basis of new and vast developments was becoming inadequate to old and common-place effects.

“In the last resort, then, we see that it is the new efficiency of Indian industry which is the radical cause both of the prosperity of India, and of the crisis which has of late checkered that prosperity. That greater efficiency has given enormous new wealth to India, augmented her revenue beyond reasonable hope, augmented the wages of her people; but it has also caused an unprofitable absorption of the precious metals in hoarding and mere currency uses, over-stimulated commercial industry by vast sudden gains, and at the very moment withdrawn that store of the precious metals which is the necessary foundation of all credit, without which unexcited industry is in danger, and without which excited industry is certain to incur panic and peril.”

General Abstract Statement of the Revenues and Charges of India, for Four Years, from 1861-62 to 1864-65.

REVENUES AND RECEIPTS.

	Actuals, 1861-62.	Actuals, 1862-63.	Budget Estimate, 1863-64.	Regular Estimate, 1863-64.	Budget Estimate, 1864-65.
	£	£	£	£	£
Land	19,684,670	19,570,147	19,708,900	20,281,000	20,265,000
Forest	460,728	520,580	250,000	291,900	320,150
Abkaree	1,786,157	1,951,080	1,839,300	1,994,000	2,087,680
Assessed taxes	2,054,696	1,882,212	1,306,200	1,395,000	1,187,660
Customs	2,876,139	2,464,366	2,339,600	2,324,200	2,311,060
Salt	4,563,081	5,244,150	5,402,400	5,278,300	5,442,510
Opium	6,359,269	8,055,476	8,000,000	6,850,000	8,200,000
Stamps	1,693,217	1,489,638	1,523,600	1,732,200	1,744,270
Mint	380,735	371,116	350,000	390,000	428,500
Post Office	402,135	425,528	430,000	430,000	485,440
Electric telegraph	73,452	75,525	85,000	85,000	103,450
Law and justice and police...	511,513	494,842	680,200	737,000	660,740
Marine	155,723	189,046	350,000	350,000	350,000
Public works	588,858	443,553	600,000	349,300	617,610
Tributes and contributions	780,162	725,763	744,000	744,000	744,900
Miscellaneous, civil	468,500	404,057	450,000	710,000	375,200
" military	956,219	802,309	822,000	696,600	661,300
Interest	34,128	34,364	90,000	115,000	178,400
Deficit	43,829,472 50,628	— —	— —	— —	— —
	43,880,100	45,143,752	44,971,200	44,753,500	46,163,870

General Abstract Statement of the Revenues and Charges of India—Contd.

EXPENDITURE.

	Actuals, 1861-62.	Actuals, 1862-63.	Budget Estimate, 1863-64.	Regular Estimate, 1863-64.	Budget Estimate, 1864-65.
	£	£	£	£	£
Allowances, refunds, and drawbacks	341,538	342,066	267,600	315,300	287,640
Land revenue, forest, and Abkaree	2,030,489	2,076,970	2,365,982	2,340,900	2,611,350
Assessed taxes	121,043	72,676	51,890	45,200	46,513
Customs	243,547	178,706	250,770	179,500	174,753
Salt	646,931	501,411	280,425	336,900	330,797
Opium	1,449,465	1,856,278	2,000,700	2,109,400	2,254,161
Stamps	68,268	98,097	96,950	99,500	98,864
Mint	106,688	180,723	146,296	182,800	236,165
Post Office	481,328	481,196	520,000	515,400	492,495
Electric telegraph	358,223	352,689	341,200	335,100	335,978
Allowances and assignments under treaties and engagements	1,640,466	1,735,663	1,754,590	1,714,900	1,704,132
Allowances to district and village officers	599,682	568,046	548,200	577,200	588,681
Miscellaneous	20,742	26,581	49,103	43,700	45,216
Contingencies, special and temporary	—	9,783	7,900	11,000	1,218
Army	12,681,900	12,764,325	12,614,972	12,765,281	12,653,189
Marine charges	686,193	744,590	306,856	551,200	538,780
Public works, including 1 per cent. income tax fund and loss by exchange on railway transactions	4,742,183	4,400,632	4,995,100	5,158,575	5,358,730
Salaries and expenses of public departments ...	1,106,749	1,091,936	1,185,587	1,172,300	1,187,265
Law and justice	1,951,217	2,074,146	2,248,086	2,178,700	2,354,311
Police	2,163,163	2,141,269	2,421,294	2,410,300	2,358,540
Education, science, and art	342,593	400,361	461,600	502,300	561,175
Political agencies and other foreign services ...	210,670	241,515	213,398	188,800	226,857
Superannuation and retired allowances and gratuities for charitable and other purposes	703,297	740,896	725,167	741,500	796,764
Miscellaneous	209,702	265,405	254,426	278,500	279,289
Civil contingencies	204,782	103,165	74,000	141,200	41,200
Interest	3,314,897	3,351,680	3,343,208	3,245,000	3,213,729
Expenditure in India	37,245,756	36,800,805	37,525,300	38,140,456	38,787,742
Net expenditure in England	5,209,264	4,943,428	5,347,300	5,035,182	4,929,924
Guaranteed interest on railway capital less net traffic receipts	1,425,080	1,572,174	1,617,825	1,546,333	1,622,916
Total expenditure	—	43,316,407	44,490,425	44,721,971	45,340,582
Surplus including railways	—	1,827,345	480,775	31,529	823,288
	43,880,100	45,143,752	44,971,200	44,753,500	46,163,870

IV.—*Cost of the English Census.*

FROM a Parliamentary Paper, bearing the signature of the Registrar-General, it appears that the cost of taking the census for 1841, 1851, and 1861 was per 1,000 of the population 5*l.* 9*s.*, 5*l.* 4*s.*, and 4*l.* 15*s.* 5*d.* respectively; and, therefore, that the cost of the last enumeration was 13*s.* 7*d.* per 1,000 less than in 1841, and 8*s.* 7*d.* less than in 1851. The expenditure, however, is confined to the expense of distributing and collecting the schedules by the local officers and their tabulation at the central office. The numbers of local officers employed, and the total emolument of each class are shown by the following figures:—

	1841.		1851.		1861.	
	Population, 15,914,		Population, 17,928,		Population, 20,066,	
	Number of Local Officers of each Class.	Amount Expended.	Number of Local Officers of each Class.	Amount Expended	Number of Local Officers of each Class.	Amount Expended.
		£		£		£
Expense incurred at the } central office	—	28,400	—	33,062	—	28,805
Payments to local officers:						
Superintendent registrars ..	622	5,060	624	3,999	631	4,732
Registrars of births, &c.	2,184	18,371	2,190	13,973	2,191	16,426
Enumerators.....	32,353	34,896	30,610	42,098	31,144	45,756
	35,159	86,727	33,424	93,132	33,966	95,719

V.—*Bank Rate of Discount from 1844 to 1864.*

A PARLIAMENTARY return shows the several changes in the Bank rate of discount from the beginning of the year 1844 to the present time. In the earlier years of the series the changes were very few; there was but one in the year 1846, one in 1849, one in 1850, none in 1851. Since 1854 the fluctuations have been much more frequent. The rate of discount was altered seven times in 1855, eight times in 1856, nine times in 1857, six times in 1858, five times in 1859, eleven times in 1860, eleven times in 1861, five times in 1862, twelve times in 1863, and six times in little more than a third of 1864—namely up to the 5th of May. The highest rate in the list was 10 per cent., which prevailed in 1857, from Lord Mayor's Day to the day before Christmas. The lowest rate was 2 per cent., which prevailed during the greater part of the year 1852, and for three months of the summer and autumn of 1862.

The date of the successive changes, and the number of days each minimum rate was in operation, are shown in the subjoined table; the *rates* are taken from the statement signed by the cashier of the Bank of England.

*Rate of Discount Charged by the Bank of England from 1st January, 1844,
to the Present Time.*

Date of Change.	Rate.	Number of Days in Force.	Date of Change.	Rate.	Number of Days in Force.
1844. 1st Jan.	4	249	1856. 22nd May ...	6	7
5th Sept.	2½	406	29th „ ...	5	28
1845. 16th Oct. ...	3	21	26th June ...	4½	97
6th Nov.	3½	294	1st Oct.	5	5
1846. 27th Aug. ...	3	140	6th „ ...	6 and 7*	38
1847. 14th Jan.	3½	7	13th Nov.	7	21
21st „	4	77	4th Dec.	6½	14
8th April	5	119	18th „ ...	6	105
5th Aug.	5½	81	1857. 2nd April....	6½	77
25th Oct.	8	28	18th June ...	6	28
22nd Nov.	7	10	16th July ...	5½	84
2nd Dec.	6	21	8th Oct.	6	4
23rd „	5	35	12th „ ...	7	7
1848. 27th Jan.	4	140	19th „ ...	8	17
15th June	3½	140	5th Nov.	9	4
2nd Nov. ..	3	385	9th „ ...	10	45
1849. 22nd Nov. ..	2½	399	24th Dec.	8	14
1850. 26th Dec.	3	370	1858. 7th Jan.	6	7
1852. 1st Jan.	2½	112	14th „ ...	5	14
22nd April .	2	259	28th „ ...	4	7
1853. 6th Jan.	2½	14	4th Feb.	3½	7
20th „	3	133	11th „ ...	3	301
2nd June	3½	91	9th Dec.	2½	140
1st Sept.	4	14	1859. 28th April....	3½	7
15th „ ...	4½	14	5th May ...	4½	28
29th „ ...	5	224	2nd June	3½	7
1854. 11th May ...	5½	84	9th „ ...	3	35
3rd Aug.	5	245	14th July ...	2½	189
1855. 5th April....	4½	70	1860. 19th Jan. ...	3	12
14th June ...	3½	84	31st „ ...	4	58
6th Sept.	4	7	29th March .	4½	14
13th „ ...	4½	14	12th April....	5	28
27th „ ...	5	7	10th May ...	4½	14
4th Oct.	5½	14	24th „ ...	4	168
18th „ ...	6 and 7*	217	8th Nov.	4½	5
			13th „ ...	5	2
			15th „ ...	6	14
			29th „ ...	5	32
			31st Dec.	6	7

* 6 per cent. for *short*, and 7 per cent. for *long* dated bills.

Rate of Discount Charged by the Bank of England—Contd.

Date of Change.	Rate.	Number of Days in Force.	Date of Change.	Rate.	Number of Days in Force.
1861. 7th Jan.	7	7	1863. 19th Feb.	4	63
14th Feb.	8	38	23rd April....	3½	7
21st March .	7	35	30th „	3	16
4th April....	6	14	16th May ...	3½	5
11th „	5	35	21st „	4	165
16th May ...	6	77	2nd Nov.	5	3
1st Aug.	5	14	5th „	6	27
15th „	4½	14	2nd Dec.	7	1
29th „	4	21	3rd „	8	21
19th Sept....	3½	49	24th „	7	27
7th Nov....	3	63			
1862. 9th Jan.	2½	133	1864. 20th Jan.	8	22
22nd May	3	49	11th Feb.	7	14
10th July	2½	14	25th „	6	20
24th „	2	98	16th April....	7	16
30th Oct.	3	77	2nd May ...	8	3
			5th „	9	15
1863. 15th Jan.'	4	13	20th „	8	7
28th „	5	22	27th „	7	—

VI.—Agricultural Statistics.

MR. CAIRD, in a letter which appeared in the *Times* of the 2nd June, has proposed a method of collecting information under this head, by taking a certain number of “typical districts.” In illustration of his suggestion, Mr. Caird appended the following example to his communication :—

“ *Example of the Change which might be Indicated by the Early Publication of such Returns.*

“ Great Britain may be supposed to have an average annual breadth of 3,000,000 acres of wheat, and an annual average produce of 10,500,000 qrs. of wheat. The following table would represent the fluctuations caused by change of breadth sown and variation of season, in wheat alone :—

	Acres.	Quarters per Acre.	Crop.	Average Imports.	Total Consumption.
Extent of wheat for 1864 (assumed average extent and crop)	3,000,000	3½	Qrs. 10,500,000	Qrs. 8,200,000	Qrs. 18,700,000
Ditto for 1865, say one-tenth increase.....	3,300,000	4	13,200,000	Imports required. 5,500,000	18,700,000
Ditto for 1866, say one-tenth decrease	2,700,000	3	8,100,000	10,600,000	18,700,000

MARRIAGES, BIRTHS, AND DEATHS IN GREAT BRITAIN.

No. I.—ENGLAND AND WALES.

MARRIAGES IN THE QUARTER ENDED 31ST DECEMBER, 1863
AND BIRTHS AND DEATHS IN THE QUARTER ENDED
31ST MARCH, 1864.

THIS Return comprises the BIRTHS and DEATHS registered by 2,200 Registrars in all the districts of England during the winter quarter that ended on March 31st, 1864; and the MARRIAGES in 12,653 churches or chapels, about 4,954 registered places of worship unconnected with the Established Church, and 641 Superintendent Registrars' offices, in the quarter that ended on December 31st, 1863.

The return exhibits important and even striking results in its threefold variety of subject. Rising with an increasing population the number of marriages was greater than it had ever been before in any quarter. The marriage-rate (*i.e.*, proportion of persons married to population) was high, though in some previous instances it had been higher. The registration of births may be described as "extraordinary," for not only were the births more numerous than they had been at any previous period, but relatively to population they were also numerous beyond example within the last ten years. And in respect to the deaths, a remarkably high rate of mortality attests the severity with which the inclemency of the winter pressed on the public health.

ENGLAND :—MARRIAGES, BIRTHS, and DEATHS, returned in the Years
1858-64, and in the QUARTERS of those Years.

Calendar YEARS, 1858-64 :—Numbers.

Years	'64.	'63.	'62.	'61.	'60.	'59.	'58.
Marriages No.	—	173,388	164,030	163,706	170,156	167,723	156,070
Births..... ,,	—	729,399	712,684	696,406	684,048	689,881	655,481
Deaths..... ,,	—	475,582	436,566	435,114	422,721	440,781	449,656

QUARTERS of each Calendar Year, 1858-64.

(I.) MARRIAGES :—Numbers.

Qrs. ended last day of	'64.	'63.	'62.	'61.	'60.	'59.	'58.
March .....No.	—	35,454	33,953	33,274	35,150	35,382	29,918
June ,,	—	44,058	40,853	42,012	43,777	42,042	39,890
Septmbr..... ,,	—	41,902	40,600	39,884	40,541	39,803	38,599
Decmbr. ,,	—	51,974	48,624	48,536	50,688	50,496	47,663

QUARTERS of each Calendar Year, 1858-64.

(II.) BIRTHS:—Numbers.

<i>Qrs. ended last day of</i>	'64.	'63.	'62.	'61.	'60.	'59.	'58.
March .....No.	192,926	186,653	181,990	172,933	183,180	175,532	170,959
June „	—	189,611	185,554	184,820	174,028	175,864	169,115
Septmbr. „	—	173,125	172,709	172,033	164,121	168,394	157,445
Decmbr. „	—	180,010	172,431	166,620	162,719	170,091	157,962

(III.) DEATHS:—Numbers.

<i>Qrs. ended last day of</i>	'64.	'63.	'62.	'61.	'60.	'59.	'58.
March .....No.	143,030	128,524	122,019	121,215	122,617	121,580	125,819
June „	—	118,375	107,392	107,558	110,869	105,631	107,142
Septmbr. „	—	112,384	92,381	101,232	86,312	104,216	98,142
Decmbr. „	—	116,299	114,774	105,109	102,923	109,354	118,553

MARRIAGES.—In the December quarter of 1863, the marriages were 51,974. They were about 3,000 more than they had been in the corresponding quarter of 1861, or in that of 1862. The following divisions of the Kingdom have contributed in a prominent degree to this result:—the west midland counties, the north-western (the seat of the cotton manufacture), Yorkshire, the northern, and the Welsh divisions. The populous districts of the cotton and woollen manufactures, as well as those of coal and iron, showed increased activity in nuptial celebrations, the result of increased or continued animation in their respective branches of industry. In Staffordshire the marriages rose from 2,009 and 1,955 in the December quarters of 1861-62 to 2,291 in that of 1863; in Lancashire from 6,078 and 5,362 to 6,503; in the West Riding of Yorkshire from 3,807 and 3,800 to 4,279; in South Wales from 1,695 and 1,771 to 1,827. The following large town districts are selected as examples of increase of marriages in the last quarter of last year:—

	December Quarter.		
	1861.	1862.	1863.
Stockport	218	198	257
Liverpool, West Derby, and Birkenhead	1,543	1,663	1,906
Manchester, Salford, and Chorlton	1,475	1,285	1,489
Ashton	271	235	295
Blackburn	281	181	322
Preston	254	197	261

In England and Wales about 8,000 persons entered into wedlock weekly. In London the number was about 1,200.

The annual marriage-rate, viz., persons married to population, was 1·998 per cent., the average being 1·964. It is invariably highest in the last three months of the year, when the full employment of summer is succeeded by comparative leisure, and the earnings of harvest are not yet *drawn* for winter service.

ENGLAND:—*Annual Rates per Cent. of PERSONS MARRIED, BIRTHS, and DEATHS, during the YEARS 1858-64, and the QUARTERS of those Years.*

Calendar YEARS, 1858-64:—General Percentage Results.

YEARS	'64.	Mean '54-'63.	'63.	'62.	'61.	'60.	'59.	'58.
Estmtd. Popln. of England in thousands in middle of each Year....	20,772	—	20,554	20,336	20,119	19,903	19,687	19,471
Persons Married Per ct.	—	1·661	1·688	1·614	1·628	1·710	1·704	1·604
Births „	—	3·450	3·549	3·504	3·461	3·437	3·504	3·366
Deaths.... „	—	2·214	2·314	2·147	2·163	2·124	2·239	2·309

QUARTERS of each Calendar Year, 1858-64.

(I.) PERSONS MARRIED:—*Percentages.*

<i>Qrs. ended last day of</i>	'64.	Mean '54-'63.	'63.	'62.	'61.	'60.	'59.	'58.
March....Per ct.	—	1·379	1·404	1·360	1·346	1·422	1·464	1·252
June..... „	—	1·689	1·722	1·614	1·678	1·766	1·716	1·646
Septmbr. „	—	1·597	1·616	1·582	1·570	1·614	1·602	1·570
Decmbr. „	—	1·964	1·998	1·890	1·906	2·012	2·026	1·934

(II.) BIRTHS:—*Percentages.*

<i>Qrs. ended last day of</i>	'64.	Mean '54-'63.	'63.	'62.	'61.	'60.	'59.	'58.
March....Per ct.	3·740	3·605	3·698	3·644	3·500	3·707	3·631	3·576
June „	—	3·611	3·705	3·665	3·690	3·512	3·588	3·488
Septmbr. „	—	3·309	3·337	3·365	3·388	3·267	3·389	3·204
Decmbr. „	—	3·273	3·461	3·350	3·272	3·230	3·414	3·205

(III.) DEATHS:—*Percentages.*

<i>Qrs. ended last day of</i>	'64.	Mean '54-'63.	'63.	'62.	'61.	'60.	'59.	'58.
March....Per ct.	2·773	2·490	2·546	2·443	2·453	2·481	2·515	2·681
June..... „	—	2·187	2·313	2·121	2·147	2·237	2·155	2·210
Septmbr. „	—	2·000	2·166	1·800	1·994	1·718	2·097	1·997
Decmbr. „	—	2·180	2·236	2·230	2·064	2·043	2·195	2·406

The marriages in 1863 were 173,388. The marriage-rate of the past year was 1·688 against an average of 1·661.

BIRTHS.—The total number of births was 192,926 in the first quarter of the present year, of which 26,651 were in London. There was an increase on the number registered in the same period of 1863 in all the eleven divisions, except London and the south-western counties. The number rose in the north-western counties (Cheshire and Lancashire) from 28,734 to 30,011.

The annual birth-rate in the quarter was 3·740 per cent. against an average of 3·605. It was singularly high; for of results obtained in the previous ten years the highest was 3·721 in the June quarter of 1854. The birth-rate rarely attains so high a point as 3·70 in any quarter, and the average for a year is 3·45.

INCREASE OF POPULATION.—As the births were 192,926, and the deaths were 143,030 in the same time, there was an excess in the former amounting to 49,896, and representing the natural increase of population in the quarter. The emigration from the *United Kingdom* comprised about 10,923 English people, 2,175 Scotch, 24,779 Irish, and 3,160 foreigners, altogether 41,037 persons.

Of the Irish, all, except a section which did not count 3,000, went to the United States. Of the English about 6,614 persons sought the United States, 3,451 the Australian Colonies. The Scotch divided themselves almost equally between those two destinations.

In the March quarter of 1862 the emigrants to the United States were 7,210; in that of 1863 they were 24,900; in the same quarter of the present year 32,275. Australia attracted 11,930 persons in the March quarter of 1863, and only 7,168 last quarter.

PRICES, PAUPERISM, AND THE WEATHER.—Meat more than maintained its price, but both wheat and potatoes were unusually cheap. The mean of the lowest and highest prices of beef as sold at Leadenhall and Newgate was $5\frac{1}{2}d.$ against $5\frac{1}{3}d.$ in the same quarter of the two previous years; and of mutton the mean price was $6\frac{1}{4}d.$, which is also higher than in either of the two corresponding periods. Wheat declined to 40s. 4d. per quarter, each period of three months since September 1862 having witnessed more or less fall in the price. From the date just specified the fall has caused a difference of 16s. 6d. per quarter. Best potatoes have fallen to a mean price of 62s. 6d. per ton at Southwark against double that price in the first three months of last year.

The amount of pauperism and its fluctuation in three successive winters are shown in the following statement. The great severity of the late season has doubtless modified, but happily has not prevented an improvement in the condition of the working classes.

	Persons in Receipt of	
	In-door Relief.	Out-door Relief.
March quarter, 1862	143,926	804,272
„ '63	143,661	948,212
„ '64	139,606	855,728

It appears in the last report of the Central Executive Committee for relief of the distressed districts that the number of persons employed in the mills full time has increased from 210,739 in last January to 232,307 in March. The report adds, that a large number returned as “out of work” are in fact “earning considerable though irregular wages on out-door labour.” There are some places in which the relief Committees have suspended their operations without risk to the health of the population; and out of 172 districts reported on, there are only 101 in which voluntary funds are now distributed. Still there are many unions in which the distress of the unemployed has been but “very slightly mitigated.”

CONSOLS, PROVISIONS, PAUPERISM, and TEMPERATURE, in each of the Nine
QUARTERS ended 31st March, 1864.

1	2	3	4		5	6	7		8	9
Quarters ending	Average Price of Consols (for Money).	Average Price of Wheat per Quarter in England and Wales.	Average Prices of Meat per lb. at Leadenhall and Newgate Markets (by the Carcase), with the <i>Mean</i> Prices.		Average Prices of Potatoes (York Regents) per Ton at Waterside Market, Southwark.	Pauperism.		Quarterly Average of the Number of Paupers relieved on the <i>last day</i> of each week.	Mean Tem- pera- ture.	
			Beef.	Mutton.		In-door.	Out-door.			
1862	£	s. d.	d. d. d.	d. d. d.	s. s. s.					
31 Mar.	93 $\frac{1}{8}$	60 1	4—6 $\frac{1}{4}$ 5 $\frac{1}{8}$	4 $\frac{3}{4}$ —6 $\frac{1}{2}$ 5 $\frac{5}{8}$	130—155 142	143,926	804,272	41 \cdot 1		
30 June	93 $\frac{6}{8}$	56 8	4—6 5	5—7 6	180—200 190	127,863	781,858	53 \cdot 3		
30 Sept.	93 $\frac{2}{8}$	56 10	4 $\frac{1}{4}$ —6 $\frac{1}{4}$ 5 $\frac{1}{4}$	5 $\frac{1}{4}$ —7 6 $\frac{1}{8}$	100—130 115	119,592	789,914	58 \cdot 7		
31 Dec.	93 $\frac{5}{8}$	48 2	4—6 $\frac{1}{4}$ 5 $\frac{1}{8}$	5 $\frac{1}{4}$ —6 $\frac{3}{4}$ 6	90—110 100	132,663	907,493	45 \cdot 0		
1863										
31 Mar.	92 $\frac{4}{8}$	46 7	4—6 $\frac{1}{4}$ 5 $\frac{1}{8}$	5—7 6	120—130 125	143,661	948,212	42 \cdot 6		
30 June	93 $\frac{1}{8}$	46 2	4 $\frac{1}{4}$ —6 $\frac{1}{4}$ 5 $\frac{1}{4}$	4 $\frac{3}{4}$ —6 $\frac{3}{4}$ 5 $\frac{3}{4}$	110—130 120	127,852	879,241	53 \cdot 0		
30 Sept.	93	45 7	4 $\frac{1}{2}$ —6 $\frac{1}{4}$ 5 $\frac{3}{8}$	4 $\frac{3}{4}$ —6 $\frac{3}{4}$ 5 $\frac{3}{4}$	70—105 87	120,189	819,795	58 \cdot 8		
31 Dec.	92 $\frac{7}{8}$	40 6	4—6 $\frac{1}{4}$ 5 $\frac{1}{8}$	5—7 6	60—80 70	130,072	804,941	46 \cdot 8		
1864										
31 Mar.	91	40 4	4 $\frac{1}{2}$ —6 $\frac{1}{2}$ 5 $\frac{1}{2}$	5 $\frac{1}{2}$ —7 6 $\frac{1}{4}$	55—70 62	139,606	855,728	37 \cdot 9		

The mean temperature of the air in the quarter at Greenwich was as low as 37 \cdot 9. In the winter quarter of 1862 it was 41 \cdot 1; in that of 1863 it was 42 \cdot 6. Mr. Glaisher writes (see Appendix to this Report) that 1863 closed with very fine weather of some weeks duration all over the country. At the commencement of 1864 the weather completely changed, and was exceedingly cold till the ninth day, the daily defect of temperature being on an average 8 $\frac{1}{2}$ \cdot . On the 6th and 7th January the defect was 15 \cdot and 13 \cdot respectively, and at night the temperature on grass fell to 6 \cdot and 7 \cdot . The frost was followed by warm, damp, foggy weather. A cold period again set in on 4th February, which lasted a week; snow fell in many parts, and on some days the defect of temperature was 10 \cdot . Another warm period succeeded, which continued five days, after which the weather assumed quite a wintry character, with frost, snow, and sleet in all parts of the country. From March 4th to 15th the weather was generally warm, and from that date to the end of the month it was cold. The season was a time of unusual change from frost to thaw, and thaw to frost. The amount of rain in the quarter was 4 \cdot 4 in., which is slightly below the average.

DEATHS; AND THE STATE OF THE PUBLIC HEALTH.—The deaths greatly exceed the average number. Seldom has a winter been more fatal; for 143,030

deaths, 1,572 a day, were registered in ninety-one days, including the additional day of Leap year, for which due correction is made. The mortality was at the rate of 2·773 per cent. ; whereas the average of the season in the preceding ten years was 2·490 per cent. ; thus the rate was nearly 28 instead 25 in 1,000.

ANNUAL RATE of MORTALITY per Cent. in TOWN and COUNTRY DISTRICTS of ENGLAND and WALES, each Quarter of the Years 1864-62.

	Area in Statute Acres.	Population Enumerated.		Quarters ending	Annual Rate of Mortality per Cent. in each Quarter of the Years			
		1851.	1861.		1864.	Mean '54-63.	1863.	1862.
In 142 Districts, and 56 Sub - districts, comprising the Chief Towns.....}	3,287,151	9,155,964	10,930,841	March	2·974	2·678	2·705	2·678
				June....	—	2·332	2·478	2·280
				Sept. ..	—	2·253	2·404	1·974
				Dec.	—	2·441	2·462	2·508
				Year	—	2·426	2·512	2·343
In the remaining Districts and Sub- districts of Eng- land and Wales, comprising chiefly Small Towns and Country Parishes }	34,037,732	8,771,645	9,135,383	Year	—	1·974	2·064	1·880
				March	2·508	2·280	2·343	2·102
				June....	—	2·023	2·102	1·974
				Sept. ..	—	1·713	1·864	1·508
				Dec.	—	1·880	1·946	1·880

Note.—The three months January, February, March, contain 90, in leap year 91 days ; the months April, May, June, 91 days ; each of the last two quarters of the year 92 days. For inequality a correction has been made in the calculations, also for the difference between 365 and 365·25 days, and 366 and 365·25 days in leap year.

14,698 persons died in excess of the average number.

Since 1842 it is only in the two winters (1847-48) after the potato failure, and in the winter of the Crimean war (1855), that the country has experienced any higher rates of mortality. The winter death-rate per 1,000 was 2·850 and 2·794 in the former years, 2·910 in 1855, and 2·773 in 1864.

In unhealthy places, and in England formerly, when the land was undrained, and when zymotic matter soiled the air and waters more abundantly than it does in these days, the mortality was highest in the hot months of the year ; but in the last quarter of a century the summer diseases have to some extent subsided, and left the mortality highest in winter, when the cold weather, in some proportion to its intensity, cuts off the weakly and the aged.

Upon dividing the population into two portions, the one living in the districts comprising the chief towns is found to have experienced the highest rate of mortality, or 2·974 per cent., while the mortality was at the rate of 2·508 in the small towns and in the country districts. The town rate was ·296, the country rate ·228, above their respective averages ; thus the increase of the rate was greater in the town than in the country districts.

London suffered to an extraordinary extent, and is accountable for a large share of the increase. The average annual rate of the winter quarter in London is 2·577 per cent., but in the last winter quarter the rate becomes 3·088, or ·511 above the average. The funerals increased in the proportion of five to six.

The annexed table shows the rate of mortality during the winter quarters in each division. It will be observed that the mortality of Lancashire and Cheshire is slightly above that of London, but is not so much above its average as the mortality of London.

Average Annual Rate of Mortality in the Eleven Divisions of England in the Ten Years 1851-60, and in the Winter Quarter of 1864.

Divisions.	Average Annual Rate of Mortality per 1,000 in Ten Years, 1851-60.	Annual Rate of Mortality per 1,000 in the Winter Quarter, 1864.
I. London	23·63	30·88
II. South-Eastern counties	19·55	24·18
III. South Midland „	20·44	26·53
IV. Eastern counties	20·58	24·51
V. South-Western counties	20·01	25·97
VI. West Midland „	22·35	27·57
VII. North Midland „	21·10	25·84
VIII. North-Western „	25·51	30·97
IX. Yorkshire	23·09	28·31
X. Northern counties	21·99	25·18
XI. Monmouthshire and Wales.....	21·28	26·28

When the thermometer falls to the freezing point of water, the mortality is raised all over the country ; and the population of London is excessively sensitive to cold ; thus the corrected average deaths for the second week of January are 1,550, but the actual number of registered deaths this year was 2,427. The mean temperature of the preceding week, instead of 37°·8, had fallen to 26°·7 ; and the temperature of one chill night (Thursday, January 7th) had descended to 14°·3, or to 17°·7 below the freezing point of Fahrenheit ; and 877 lives were extinguished by “ the cold wave of the atmosphere.”

The excess of the rate of mortality per cent. during the last winter quarter was ·228 in the country districts and small towns, ·284 in the large town districts, exclusive of London, and ·511 in London, above the average of the quarter.

Fire is a necessary of life in this climate ; and a warm hearth mitigates the severity of winter. Fire is as much required by the poor as by the rich ; and a tax on coals, like a tax on salt, presses with undue severity on people of small means. Coal at the pit's mouth costs about 5s. a ton ; and anything that facilitates its carriage and distribution in cities, by the abolition of duties and monopolies, or by laying down railways, if it lead to a diminution of cost, will preserve many lives that come to an untimely end in such severe weather as has reigned during the last winter months.

The rate of the north-western counties, Cheshire and Lancashire, was 30·97 per 1,000. The mortality of the counties which are now suffering from the cotton crisis, has always been higher than the mortality of the rest of the kingdom, owing chiefly to the sanitary defects of the towns. Under the Public Works Act, which was passed during the last Session, some of these defects will be remedied. Mr. Rawlinson, in his intelligent report justly says : “ The high death-rate prevailing in Lancashire towns has its main cause in the foul cottage cess-pit. An inspection of any town in the district will show this.”* The works on which the people are employed at the instance of the local authorities are nearly all of a hygienic character, and cannot fail to be salutary through all future times.

* “ Report of Robert Rawlinson, Esq., C.E., to the President of the Poor Law Board,” April, 1864.

ENGLAND: — MARRIAGES *Registered in Quarters ended 31st December, 1863-61; and BIRTHS and DEATHS in Quarters ended 31st March, 1864-62.*

1	2	3	4	5	6
DIVISIONS. (England and Wales.)	AREA in Statute Acres.	POPULATION, 1861. (Persons.)	MARRIAGES in Quarters ended 31st December.		
			'63.	'62.	'61.
		No.	No.	No.	No.
ENGLD. & WALES....Totals	37,324,883	20,066,224	51,974	48,624	48,536
I. London	77,997	2,803,989	7,872	7,811	7,333
II. South-Eastern	4,065,935	1,847,661	4,615	4,381	4,277
III. South Midland	3,201,290	1,295,497	3,230	3,099	3,005
IV. Eastern	3,214,099	1,142,580	3,099	3,025	2,978
V. South-Western	4,993,660	1,835,714	3,843	3,826	3,893
VI. West Midland	3,865,332	2,436,568	6,630	6,071	6,186
VII. North Midland	3,540,797	1,288,928	3,150	3,037	2,879
VIII. North-Western	2,000,227	2,935,540	7,639	6,369	7,087
IX. Yorkshire	3,654,636	2,015,541	5,653	5,143	5,171
X. Northern	3,492,322	1,151,372	2,920	2,762	2,777
XI. Monmthsh. & Wales	5,218,588	1,312,834	3,323	3,100	2,950

7	8	9	10	11	12	13
DIVISIONS. (England and Wales.)	BIRTHS in Quarters ended 31st March,			DEATHS in Quarters ended 31st March,		
	'64.	'63.	'62.	'64.	'63.	'62.
	No.	No.	No.	No.	No.	No.
ENGLD. & WALES....Totals	192,926	186,653	181,990	143,030	128,524	122,019
I. London	26,651	26,750	25,425	22,733	18,967	18,191
II. South-Eastern	16,659	16,260	15,550	11,581	10,112	9,590
III. South Midland	11,994	11,532	11,106	8,714	7,481	7,005
IV. Eastern	10,478	10,055	9,425	7,051	6,891	6,189
V. South-Western	16,020	16,037	15,357	11,978	11,149	9,701
VI. West Midland	24,859	23,725	22,767	17,435	16,507	14,867
VII. North Midland	11,838	11,679	11,350	8,468	7,354	7,073
VIII. North-Western	30,011	28,734	29,424	23,824	20,999	21,604
IX. Yorkshire	20,503	19,088	18,892	14,755	13,554	12,537
X. Northern	12,090	11,435	11,519	7,613	7,409	7,182
XI. Monmthsh. & Wales	11,823	11,358	11,175	8,878	8,101	8,080

REMARKS ON THE WEATHER

DURING THE QUARTER ENDING 31ST MARCH, 1864.

By JAMES GLAISHER, ESQ., F.R.S., &c., Sec. of the British Meteorological Society.

The year 1863 closed with very fine weather for the season all over the country, and which had continued for several weeks. At the beginning of January, 1864, the weather completely changed, and till the 9th day the weather was exceedingly cold, averaging a daily deficiency of $8^{\circ}\frac{1}{2}$ of temperature; on the 6th the deficiency was as large as 15° , and exceeded 13° on the 7th, and the temperature on grass at night was as low as 6° and 7° , checking the advance of vegetation. The frost broke up on the 10th, and a period of warm, damp, and foggy weather set in, and till February 3rd there was an average daily excess of $3^{\circ}\frac{1}{2}$ of temperature. On February 4th a cold period set in, snow fell in many parts of the country, and till the 11th day the deficiency of daily temperature was $7^{\circ}\frac{1}{2}$; on some days within this period it exceeded 10° ; a period of five days followed, ending the 16th, during which the weather was warm; the average daily excess was $6^{\circ}\frac{3}{4}$ nearly. From February 17th the weather was altogether of a wintry character, with frost, snow, and sleet at all parts of the country. The wind blew from the north and east, and the average daily deficiency of temperature for 16 days ending March 3rd, was $4^{\circ}\frac{1}{2}$. From March 4th to the 15th, the weather was generally warm, there being an excess of $2^{\circ}\frac{3}{4}$ daily; and from March 16th to the end of the quarter, there was a daily deficiency to the average amount of 2° . During these three months there was an unusual number of alternations in temperature and change of weather from frost to thaw.

The mean temperature of January was $36^{\circ}\cdot5$, being $5^{\circ}\cdot3$ colder than it was in 1862, and of lower temperature than any since 1861, when it was $33^{\circ}\cdot9$.

The mean temperature of February was $36^{\circ}\cdot0$, being $6^{\circ}\cdot1$ lower than in 1862, and colder than any since 1860, when it was $35^{\circ}\cdot7$.

The mean temperature of March was $41^{\circ}\cdot3$, being $2^{\circ}\cdot6$ colder than in 1862; and colder than any March since 1860, when it was $41^{\circ}\cdot1$.

The temperature of the air decreased from December to January by 4° or 5° in Cornwall and Devonshire; at most other places by 6° , 7° , or 8° ; at Liverpool the decrease was as large as 10° . The temperature of February was slightly higher than in January at places situated between 51° and 53° ; but both north and south of these parallels it was colder than in January. There was an increase of 4° , 5° , or 6° in March at places south of 53° , and from 2° to 3° north of this latitude.

The mean high day temperature was below their averages to the amount of $1^{\circ}\cdot9$; $3^{\circ}\cdot6$; and $0^{\circ}\cdot4$ respectively in these three months.

The mean low night temperature was below their averages to the amount of $1^{\circ}\cdot9$; $2^{\circ}\cdot4$; and $1^{\circ}\cdot3$ respectively.

Therefore both the days and nights were cold in these three months.

The mean temperature of the air in January, was $1^{\circ}\cdot8$, in February $2^{\circ}\cdot9$, and in March $0^{\circ}\cdot7$ below their respective averages of the preceding 23 years.

The mean temperature of the dew point was 4°·0, 3°·5, and 0°·6 below their averages respectively, as compared with the results from the preceding 23 years.

The degree of humidity was less than its average in January and February, and a little above in March.

The pressure of the atmosphere was a little more than $\frac{1}{4}$ in. in excess in January, somewhat in defect in February, and about $\frac{1}{4}$ in. in March. The pressure of the atmosphere decreased from December to January at Guernsey and in Cornwall and Devonshire; and increased at all other places to small amounts at southern, and nearly to $\frac{1}{4}$ in. at northern stations; from January to February there was a decrease everywhere, the largest being in the midland counties, and amounting to nearly 0·3 in.; and a further decrease took place from February to March to the amount of 0·25 in. nearly at all places.

The fall of rain was in defect in January and February to the amount of 0·9 in. and 0·8 in. respectively, and in excess to the amount of 1·2 in. in March.

The mean temperature of the air at Greenwich in the three months ending February, constituting the three winter months, was 38°·6, being 0°·7 above the average of the preceding 93 years.

1864. Months.		Temperature of										Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.	
		Air.			Evaporation.		Dew Point.		Air— Daily Range.		Water of the Thames				
		Mean.	Diff. from Aver- age of 93 Years.	Diff. from Aver- age of 23 Years.	Mean.	Diff. from Aver- age of 23 Years.	Mean.	Diff. from Aver- age of 23 Years.	Mean.	Diff. from Aver- age of 23 Years.		Mean.	Diff. from Aver- age of 23 Years.	Mean.	Diff. from Aver- age of 23 Years.
Jan.	36·5	+0·3	−1·8	34·4	−2·7	31·3	−4·0	9·7	0·0	39·7	In. ·176	In. −·028	Gr. 2·0	Gr. −0·4	
Feb.	36·0	−2·3	−2·9	34·1	−3·1	31·3	−3·5	10·3	−1·2	38·5	·176	−·028	2·0	−0·4	
Mar.	41·3	+0·3	−0·7	39·1	−0·7	36·2	−0·6	15·5	+0·8	43·0	·215	−·004	2·5	0·0	
Mean.....	37·9	−0·6	−1·8	35·9	−2·2	32·9	−2·7	11·8	−0·1	40·4	·189	−·020	2·2	−0·3	

1864. Months.	Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Hori- zontal Move- ment of the Air.	Reading of Thermometer on Grass				
	Mean.	Diff. from Aver- age of 23 Years.	Mean.	Diff. from Aver- age of 23 Years.	Mean.	Diff. from Aver- age of 23 Years.	Amt.	Diff. from Aver- age of 23 Years.		Number of Nights it was			Low- est Read- ing at Night.	High- est Read- ing at Night.
										At or below 30°.	Be- tween 30° and 40°.	Above 40°.		
Jan.	82	— 7	In. 30·044	+·284	Gr. 561	+ 7	In. 0·9	—0·9	Miles. 214	18	10	3	6·0	43·1
Feb.	88	— 2	29·760	—·044	557	+ 3	0·8	—0·8	270	18	11	0	12·1	37·3
Mar.	83	+ 1	29·503	—·266	546	— 4	2·7	+1·2	281	18	12	1	19·6	41·3
Mean.....	83	— 3	29·769	— 009	555	+ 2	Sum 4·4	Sum —0·5	Mean 255	Sum 54	Sum 33	Sum 4	Lowest 6·0	Highest 43·1

Note.—In reading this table it will be borne in mind that the sign (−) minus signifies below the average, and that the sign (+) plus signifies above the average.

ENGLAND :—*Meteorological Table, Quarter ended 31st March, 1863.*

1	2	3	4	5	6	7	8	9
NAMES OF STATIONS.	Mean Pressure of Dry Air reduced to the Level of the Sea.	Highest Reading of the Thermo- meter.	Lowest Reading of the Thermo- meter.	Range of Tem- perature in the Quarter.	Mean Monthly Range of Tem- perature.	Mean Daily Range of Tem- perature.	Mean Tem- perature of the Air.	Mean Degree of Hu- midity.
	in.	°	°	°	°	°	°	
Guernsey	29·695	57·5	23·5	34·0	26·3	6·7	41·9	88
Exeter	29·734	64·3	19·5	44·0	35·1	13·4	40·8	81
Ventnor	29·780	54·0	25·0	29·0	25·3	8·0	41·8	78
Barnstaple	29·699	62·5	21·5	41·0	32·7	11·4	41·6	89
Royal Observatory	29·763	58·0	14·3	43·7	34·8	11·8	37·9	83
Royston.....	29·788	61·4	13·8	47·6	37·6	12·7	36·8	86
Lampeter	29·686	60·0	11·0	49·0	38·1	13·8	38·9	93
Norwich	29·733	57·5	18·0	39·5	33·0	11·0	39·1	86
Belvoir Castle ...	29·638	56·3	10·0	46·3	38·5	12·9	36·3	91
Liverpool	29·732	54·2	18·3	35·9	27·8	8·0	36·0	80
Wakefield	29·714	55·8	12·0	43·8	36·1	12·6	37·2	92
Stonyhurst.....	29·684	53·3	18·3	35·0	31·5	10·0	36·4	85
York	29·678	53·5	14·0	39·5	34·5	10·7	36·4	94
North Shields ...	29·634	53·0	21·2	31·8	29·9	8·6	36·2	90
Alnwick	29·643	59·0	20·0	39·0	33·3	12·9	36·1	90

10	11	12	13	14	15	16	17	18
NAMES OF STATIONS.	WIND.					Mean Amount of Cloud.	RAIN.	
	Mean estimated Strength.	Relative Proportion of					Number of Days on which it fell.	Amount collected.
		N.	E.	S.	W.			
								in.
Guernsey	1·2	7	8	8	8	5·8	42	9·3
Exeter	1·6	8	10	6	7	3·9	45	6·9
Ventnor	—	7	10	4	10	—	40	7·7
Barnstaple	—	6	7	11	7	4·5	39	6·3
Royal Observatory	0·4	8	8	8	7	7·2	36	4·4
Royston.....	—	8	6	9	8	6·0	61	5·6
Lampeter	0·7	6	9	9	7	6·5	42	7·2
Norwich.....	1·3	7	9	7	8	6·9	26	4·6
Belvoir Castle ...	1·2	6	5	12	8	6·2	33	4·4
Liverpool	1·1	6	8	9	8	6·9	37	6·3
Wakefield	1·7	8	8	9	6	7·0	42	4·6
Stonyhurst.....	0·7	9	8	5	9	7·1	46	11·6
York	—	6	10	5	10	—	37	3·8
North Shields ...	1·7	7	5	9	10	6·5	54	6·9
Alnwick	1·8	5	11	2	13	7·0	41	8·4

No. II.—SCOTLAND.

MARRIAGES, BIRTHS, AND DEATHS IN THE QUARTER
ENDED 31ST MARCH, 1864.

This Return comprises the number of BIRTHS, DEATHS, and MARRIAGES entered on the registers of the 1,010 districts into which Scotland is divided for the purposes of registration during the quarter ending 31st March, 1864. From the returns received, it would appear that the births, deaths, and marriages have each and all been considerably above the average of the first quarter of former years.

BIRTHS.—28,177 births were registered in Scotland during the quarter ending 31st March, 1864, being in the annual proportion of 361 births in every ten thousand of the estimated population, or one birth to every 27 persons. This is a proportion very much above the average of the corresponding quarter in former years; for the eight years, 1856 to 1863 inclusive, only yielded a proportion of 344 births in every ten thousand persons; and even in 1860, when the highest proportion was attained, the rate was only 356 births for every ten thousand persons. The high death-rate which prevailed over all Scotland during the previous year, is quite sufficient to have produced this great increase in the births; and the close connection of these events has been repeatedly pointed out in these reports.

The difference in the proportion of births in the town and in the country districts was greater than usual. Thus, in the 126 town districts (which embrace almost all the towns with populations of 2,000 and upwards), 19,874 births were registered; whereas, in the 884 country districts (embracing the remainder of the population of Scotland), only 8,303 births occurred; thus indicating an annual proportion of 480 births in every ten thousand persons in the town districts, but only 227 for an equal population in the country districts.

Of the 28,177 births, 25,313 were legitimate, and 2,864 illegitimate, being in the proportion of 10·1 per cent. of the births as illegitimate, or one illegitimate in every 9·8 births. The difference between the proportion of the illegitimate births in the town and country districts was greater than has been observed in any previous quarter; for, while only 9·2 per cent. of the town births were illegitimate, 12·2 per cent. of the births in the country districts were illegitimate. The accompanying table shows the proportion of illegitimate births in the several divisions and counties of Scotland, and exhibits a general accord with previous returns, showing that the counties embraced in the north-eastern and southern divisions of Scotland exhibit a much higher proportion of illegitimate births than any of the other divisions. Thus, while in the northern and north-western divisions, only 6·3 and 6·7 per cent. of the births respectively were illegitimate, 14·6 per cent. of the births were illegitimate in the southern divisions, and 16·6 per cent. in the north-eastern division.

Of the children born during the quarter, 14,356 were boys, and 13,821 girls, being in the proportion of nearly 104 boys for every 100 girls at birth. During 1863 the proportion of boys was unusually high; during the above quarter they are below the average of Scotland.

DEATHS.—22,576 deaths were registered in Scotland during the first quarter of the year 1864, being in the annual proportion of 289 deaths in every ten thousand persons of the estimated population. This is the highest death-rate which has occurred in Scotland during any quarter of the last ten years. The average mortality of the first quarter during the previous nine years was only 239 deaths in every ten thousand persons; and the fatal first quarter of 1860 was the only one when the death-rate made any approach to that of 1864, and then it was only at the rate of 265 deaths in every ten thousand of the estimated population.

The deaths in the town districts were greatly more numerous in proportion to the population than in the rural districts. Thus, in the 126 town districts, 17,042 deaths were registered, but only 5,534 in the 884 rural districts, indicating an annual proportion of 411 deaths in every ten thousand persons in the town districts, but only 151 deaths in a like population in the rural districts. The great increase in the mortality, therefore, has been entirely confined to the town districts, and has not extended to the rural districts, which, indeed, have remained at their low summer rate of mortality.

Of the deaths, 7,673 occurred during January, 7,290 during February, and 7,613 during March; so that the daily deaths in Scotland amounted to 248 in January, 351 in February, and 245 in March.

INCREASE OF THE POPULATION.—As the births numbered 28,177, and the deaths 22,576, the natural increase of the population during the quarter, through the excess of births over deaths, amounted to 5,601 persons. From a return furnished to the Registrar-General by the Emigration Commissioners, it appears that 41,037 persons emigrated from the ports of Great Britain and Ireland, of which number 2,143 were ascertained to be of Scottish origin. If 32 be added to that number as the proportion of those whose origin was not ascertained, the total ascertained Scottish emigration during the quarter would amount to 2,175, and this deducted from the excess of births over deaths, would leave 3,426 as the increase of the population during the quarter. These calculations make no allowance for the large emigration to England, or the drafts to the Army, Navy, and merchant shipping.

MARRIAGES.—5,333 marriages were registered in Scotland during the first quarter, being in the annual proportion of 68 marriages in every ten thousand persons of the estimated population. This is a proportion greatly above the average of the first quarter of the nine previous years, which only gave a rate of 61 marriages in every ten thousand persons.

This high rate of marriage, like the births and the deaths, was entirely confined to the town districts; for, while the 126 town districts registered 4,075 marriages, the 884 rural districts only registered 1,258; thus indicating a marriage-rate in the towns equal to 96 marriages in every ten thousand persons, but only 34 marriages in the rural districts in a like population.

HEALTH OF THE POPULATION.—The population has been extremely unhealthy during the quarter, and the mortality been high above the average of the corresponding quarters of the nine previous years. Strange to say, however, this high mortality has been limited to the town districts alone, and has not extended to the country districts. In these last, indeed, the mortality has been lower than usual during the first quarter, in fact nearly as low as during the third quarter, when the mortality is always lowest.

WEATHER.—This has been the most severe winter we have had for many years past; and severe frosts and heavy falls of snow extended to the middle of March. This lower temperature and more severe weather seemed to be due to a greater prevalence than usual of winds from the north and east (for both these are the same aerial currents), and when they form the terrestrial currents during the above months, they invariably bring frost and snow with them, which only disappears on the westerly and southerly breezes regaining their usual sway.

The mean temperature of the whole of the months has been lower than the average of former years; and it is this lower temperature which is the element most destructive to life. Thus the mean temperature of the quarter in former years was $38^{\circ}7$, but during the past quarter it was only $35^{\circ}7$, or 3° lower than the average; while, during February, the mean temperature was $5^{\circ}3$ below the average of former years. The number of days on which snow or rain fell was greater than usual, as was also the amount of water deposited in the form of snow, rain, or hail. The humidity of the atmosphere was also greater than usual during the quarter.

SCOTLAND:—MARRIAGES, BIRTHS, and DEATHS Registered in the Quarter ended 31st March, 1864.

1	2	3	4	5	6
DIVISIONS. (Scotland)	AREA in Statute Acres.	POPULATION, 1861. (Persons.)	Marriages.	Births.	Deaths.
		No.	No.	No.	No.
SCOTLAND.....Totals	19,639,377	3,062,294	5,333	28,177	22,576
I. Northern	2,261,622	130,422	187	805	642
II. North-Western	4,739,876	167,329	329	1,131	914
III. North-Eastern	2,429,594	366,783	481	3,245	2,334
IV. East Midland	2,790,492	523,822	875	4,392	3,631
V. West Midland	2,693,176	242,507	319	2,069	1,629
VI. South-Western	1,462,397	1,008,253	2,166	11,107	9,325
VII. South-Eastern	1,192,524	408,962	720	3,736	2,891
VIII. Southern	2,069,696	214,216	256	1,692	1,210

No. III.—GREAT BRITAIN.

SUMMARY of MARRIAGES, in the Quarter ended 31st December, 1863; and BIRTHS and DEATHS, in the Quarter ended 31st March, 1864.

COUNTRIES.	AREA in Statute Acres.	POPULATION, 1861. (Persons.)	Marriages.	Births.	Deaths.
		No.	No.	No.	No.
England and Wales.....	37,324,883	20,066,224	51,974	192,926	143,030
Scotland	19,639,377	3,062,294	6,577	28,177	22,576
GREAT BRITAIN	56,964,260	23,128,518	58,551	221,103	165,606

de of United Kingdom, 1863-62-61.—*Distribution of Exports from United Kingdom, according to the Declared Real Value of the Exports; and the Computed Real Value (Ex-duty) of Imports at Port of Entry, and therefore including Freight and Importer's Profit.*

Merchandise (<i>excluding Gold and Silver</i>), Imported from, and Exported to, the following Foreign Countries, &c. [000's omitted.]	Whole Years.					
	1863.		1862.		1861.	
	Imports from	Exports to	Imports from	Exports to	Imports from	Exports to
I.—FOREIGN COUNTRIES:	£	£	£	£	£	£
Northern Europe; viz., Russia, Sweden, Norway, Denmark & Iceland, & Heligoland	19,312,	4,871,	21,121,	4,124,	18,649,	5,057,
Central Europe; viz., Prussia, Germany, the Hanse Towns, Holland, and Belgium	27,426,	21,702,	27,921,	20,536,	24,663,	21,303,
Western Europe; viz., France, Portugal with Azores, Madeira, &c.), and Spain with Gibraltar and Canaries)	31,837,	15,972,	28,096,	14,912,	24,979,	15,126,
Northern Europe; viz., Italy, Austrian Empire, Greece, Ionian Islands, and Malta	4,568,	8,303,	5,045,	6,879,	4,872,	7,896,
Constantinople, viz., Turkey, with Wallachia and Moldavia, Syria and Palestine, and Egypt	22,553,	11,298,	17,251,	6,661,	13,247,	6,306,
Northern Africa; viz., Tripoli, Tunis, Algeria, and Morocco	542,	191,	489,	204,	544,	171,
Western Africa	1,412,	655,	1,720,	939,	1,515,	878,
Eastern Africa; with African Ports on the Red Sea, Aden, Arabia, Persia, Bourbon, and Kooria Moorla Islands	37,	75,	—	74,	6,	39,
Indian Seas, Siam, Sumatra, Java, Philippines; other Islands	1,598,	1,228,	1,041,	1,248,	1,183,	1,918,
China Sea Islands	20,	141,	—	—	—	115,
India, including Hong Kong	15,479,	4,032,	12,749,	3,190,	9,610,	4,891,
United States of America	19,571,	15,352,	27,693,	14,399,	49,385,	9,058,
Mexico and Central America	2,780,	1,819,	1,112,	925,	662,	756,
Spanish West Indies and Hayti	4,857,	3,487,	4,591,	3,148,	4,900,	2,472,
South America (Northern), New Granada, Venezuela, and Ecuador	867,	1,969,	916,	1,008,	539,	1,405,
„ (Pacific), Peru, Bolivia, Chili, and Patagonia	6,113,	2,461,	5,602,	1,707,	5,718,	2,561,
„ (Atlantic) Brazil, Uruguay, and Buenos Ayres	6,954,	5,831,	6,540,	5,073,	4,741,	6,525,
Island Fisheries; Grnld., Davis' Straits, Southern Whale Fishery, & Falkland Islands	89,	12,	123,	10,	135,	10,
Total.—Foreign Countries	166,015,	99,399,	162,010,	85,037,	165,348,	86,487,
II.—BRITISH POSSESSIONS:						
British India, Ceylon, and Singapore	53,966,	22,558,	39,014,	16,282,	26,155,	17,925,
Colonial Colonies.—New South Wales and Victoria	4,648,	8,756,	4,950,	9,218,	4,945,	8,265,
„ „ So. Aus., W. Aus., Tasm., and N. Zea.	2,513,	3,749,	2,160,	2,712,	1,956,	2,437,
British North America	8,166,	4,819,	8,499,	3,993,	8,664,	3,697,
W. Indies with Btsh. Guiana & Honduras	8,910,	3,928,	6,584,	3,187,	6,106,	2,665,
„ and Natal	1,920,	1,524,	1,517,	1,922,	1,422,	1,987,
W. Co. of Af., Ascension and St. Helena	208,	369,	237,	411,	202,	434,
„ Mauritius	1,986,	522,	968,	521,	1,914,	552,
„ Channel Islands	648,	866,	653,	854,	639,	666,
Total.—British Possessions	82,965,	47,091,	64,582,	39,100,	52,003,	38,628,
General Total£	248,980,	146,490,	226,592,	124,137,	217,351,	125,115,

Note.—The Exports are of British and Irish produce and manufactures only; the value of foreign colonial produce exported in 1861 and 1862, was £34,530,000, and £42,176,000 respectively.

IMPORTS.—(United Kingdom.)—Whole Years, 1863-62-61-60-59.—*Computed Real Value (Ex-duty), at Port of Entry (and therefore including Freight and Importer's Profit), of Articles of Foreign and Colonial Merchandize Imported into the United Kingdom.*

(Whole Years.) FOREIGN ARTICLES IMPORTED.		(000's omitted.)	1863.	1862.	1861.	1860.	1859.
			£	£	£	£	£
RAW MATLS.—Textile.	Cotton Wool		56,278,	31,093,	38,653,	35,757,	34,568,
	Wool (Sheep's)..		12,290,	12,109,	9,719,	11,031,	9,831,
	Silk		15,248,	15,897,	7,907,	10,324,	10,596,
	Flax		4,271,	5,206,	3,423,	3,837,	3,769,
	Hemp		3,451,	2,645,	1,894,	1,865,	2,363,
	Indigo		2,398,	2,446,	2,977,	2,529,	1,929,
			93,936,	69,396,	64,573,	65,343,	63,056,
,, ,, Various.	Hides		3,217,	3,188,	2,892,	3,296,	3,373,
	Oils		4,075,	3,951,	3,576,	3,923,	3,654,
	Metals		4,087,	4,604,	3,752,	4,228,	3,887,
	Tallow		2,439,	2,508,	3,312,	4,014,	2,933,
	Timber.....		10,754,	9,293,	9,931,	9,206,	8,163,
			24,572,	23,544,	23,463,	24,667,	22,010,
,, ,, Agricltl.	Guano		2,659,	1,635,	2,022,	1,563,	769,
	Seeds		3,372,	3,211,	3,108,	3,392,	3,042,
			6,031,	4,846,	5,130,	4,955,	3,811,
TROPICAL, & C., PRODUCE.	Tea		10,666,	9,176,	6,851,	6,944,	5,813,
	Coffee		4,155,	3,303,	2,629,	2,543,	1,956,
	Sugar & Molasses		12,367,	12,019,	13,252,	12,811,	12,539,
	Tobacco		3,017,	2,351,	2,195,	1,778,	1,817,
	Rice		1,866,	2,400,	2,127,	1,023,	805,
	Fruits		1,562,	1,228,	1,470,	1,254,	1,599,
	Wine		4,497,	3,649,	3,863,	4,202,	2,781,
	Spirits		1,706,	1,692,	1,734,	1,919,	2,228,
			39,836,	35,818,	34,121,	32,474,	29,538,
FOOD :	Grain and Meal..		25,886,	37,748,	34,750,	31,432,	17,894,
	Provisions		8,789,	8,564,	7,780,	6,546,	3,372,
			34,675,	46,312,	42,530,	37,978,	21,266,
Remainder of Enumerated Articles			4,776,	4,213,	3,869,	3,714,	3,379,
TOTAL ENUMERATED IMPORTS....			203,826,	184,129,	173,687,	169,131,	143,060,
Add for UNENUMERATED IMPORTS (say)			45,154,	42,473,	43,422,	42,283,	35,765,
TOTAL IMPORTS.....			248,980,	226,592,	217,109,	211,414,	178,825,

IMPORTS.—(United Kingdom.)—First Two Months (*January—February*), 1864-63-62-61-60.—*Computed Real Value (Ex-duty), at Port of Entry (and therefore including Freight and Importer's Profit), of Articles of Foreign and Colonial Merchandise Imported into the United Kingdom.*

(First Two Months.) [000's omitted.] FOREIGN ARTICLES IMPORTED.		1864.	1863.	1862.	1861.	1860.
		£	£	£	£	£
RAW MATLS.— <i>Textile.</i>	Cotton Wool	6,060,	3,532,	1,206,	3,979,	5,338,
	Wool (Sheep's)..	534,	578,	510,	392,	660,
	Silk	1,635,	2,190,	2,034,	1,181,	1,385,
	Flax	810,	387,	366,	198,	297,
	Hemp	209,	110,	60,	54,	58,
	Indigo	94,	223,	179,	66,	93,
		9,342,	7,020,	4,355,	5,870,	7,831,
,, , <i>Various.</i>	Hides	169,	162,	182,	124,	299,
	Oils	293,	378,	339,	170,	363,
	Metals	492,	411,	525,	260,	349,
	Tallow	176,	77,	145,	130,	134,
	Timber.....	973,	556,	498,	526,	363,
		2,103,	1,584,	1,689,	1,210,	1,508,
,, , <i>Agricltl.</i>	Guano	109,	141,	54,	151,	134,
	Seeds	553,	233,	242,	288,	317,
		662,	374,	296,	379,	451,
TROPICAL, & C., PRODUCE.	Tea	1,201,	2,120,	1,639,	1,110,	1,158,
	Coffee	271,	350,	284,	172,	188,
	Sugar & Molasses	935,	1,357,	1,153,	1,304,	1,111,
	Tobacco	263,	314,	154,	179,	43,
	Rice	85,	100,	46,	128,	87,
	Fruits	62,	40,	82,	173,	100,
	Wine	708,	595,	448,	544,	391,
	Spirits	331,	345,	241,	186,	215,
		3,856,	5,221,	4,047,	3,796,	3,293,
GOOD	Grain and Meal..	3,263,	3,957,	5,274,	6,172,	1,709,
	Provisions	937,	565,	658,	508,	649,
		4,200,	4,522,	5,932,	6,680,	2,358,
Remainder of Enumerated Articles		572,	512,	408,	311,	431,
TOTAL ENUMERATED IMPORTS....		20,735,	19,233,	16,727,	18,246,	15,872,
Add for UNENUMERATED IMPORTS (say)		5,183,	4,808,	4,182,	4,561,	3,968,
TOTAL IMPORTS		25,918,	24,041,	20,909,	22,807,	19,840,

EXPORTS.—(United Kingdom.)—First Three Months (*January — March*),
1864-63-62-61-60.—*Declared Real Value, at Port of Shipment, of Articles of*
BRITISH and IRISH Produce and Manufactures Exported from United Kingdom.

(First Three Months.) [000's omitted.] BRITISH PRODUCE, &c., EXPORTED.		1864.	1863.	1862.	1861.	1860.
		£	£	£	£	£
MANFRS.—Textile.	Cotton Manufactures..	10,465,	6,312,	7,530,	9,134,	9,389,
	„ Yarn	2,103,	1,143,	1,389,	1,908,	2,425,
	Woollen Manufactures	4,718,	3,209,	2,985,	2,876,	3,005,
	„ Yarn	1,073,	984,	669,	641,	807,
	Silk Manufactures ...	387,	443,	473,	532,	503,
	„ Yarn	55,	84,	78,	55,	48,
	Linen Manufactures...	1,998,	1,455,	1,088,	1,084,	1,122,
	„ Yarn	653,	493,	403,	327,	469,
		21,452,	14,123,	14,615,	16,557,	17,768,
	„ Sewed. Apparel	554,	526,	422,	390,	462,
	Haberdy. and Millry	1,252,	860,	673,	902,	989,
		1,806,	1,386,	1,095,	1,292,	1,451,
METALS	Hardware.....	842,	680,	566,	732,	816,
	Machinery	924,	838,	718,	750,	663,
	Iron	2,982,	2,536,	2,049,	2,058,	2,395,
	Copper and Brass.....	697,	784,	596,	474,	676,
	Lead and Tin	709,	610,	586,	350,	573,
	Coals and Culm	903,	765,	782,	658,	618,
		7,057,	6,178,	5,297,	5,022,	5,741,
Ceramic Manufcts.	Earthenware and Glass	490,	435,	357,	385,	480,
Indigenous Mnfrs.	Beer and Ale	474,	456,	402,	348,	645,
	Butter	69,	108,	54,	134,	139,
	Cheese	41,	31,	25,	27,	26,
	Candles	32,	54,	47,	69,	63,
	Salt	48,	52,	58,	78,	61,
	Spirits	161,	114,	58,	79,	60,
	Soda	209,	198,	186,	117,	226,
		1,034,	1,013,	830,	852,	1,220,
Various Manufcts.	Books, Printed.....	100,	89,	83,	100,	101,
	Furniture	47,	64,	45,	35,	48,
	Leather Manufactures	525,	456,	585,	402,	514,
	Soap	53,	59,	53,	46,	63,
	Plate and Watches ...	98,	114,	94,	102,	120,
	Stationery.....	75,	59,	57,	143,	181,
		898,	842,	917,	828,	1,027,
	Remainder of Enumerated Articles	2,212,	1,771,	1,663,	710,	707,
	Unenumerated Articles	1,718,	1,813,	1,649,	2,023,	2,087,
	TOTAL EXPORTS	36,667,	27,561,	26,423,	27,669,	3,0481,

SHIPPING.—FOREIGN TRADE.—(United Kingdom.)—First Three Months
(January—March), 1864-63-62-61.—Vessels Entered and Cleared with Cargoes,
including repeated Voyages, but excluding Government Transports.

(First Three Months.) ENTERED:—	1864.			1863.		1862.		1861.	
	Vessels.	Tonnage (000's omitted.)	Average Tonnage.	Vessels.	Tonnage (000's omitted.)	Vessels.	Tonnage (000's omitted.)	Vessels.	Tonnage (000's omitted.)
	No.	Tons.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
<i>Vessels belonging to—</i>									
Russia	75	31,	413	43	16,	55	20,	60	23,
Sweden	135	24,	178	112	22,	65	16,	117	25,
Norway	515	113,	220	427	100,	314	62,	212	43,
Denmark	617	61,	99	479	47,	309	32,	379	39,
Prussia and Ger. Sts.	452	121,	268	496	140,	361	101,	375	108,
Holland and Belgium	461	56,	121	406	53,	356	47,	295	39,
France	700	57,	81	760	64,	396	35,	597	47,
Spain and Portugal	78	22,	282	87	26,	77	24,	102	25,
Italy & other Eupn. Sts.	112	36,	321	135	40,	81	27,	214	61,
United States	111	124,	1,118	209	217,	248	221,	489	450,
All other States	2	1,	500	5	2,	2	1,	3	1,
United Kingdm. & } Depds..... }	3,258	646,	198	3,159	728,	2,264	586,	2,843	861,
	4,522	1,417,	313	4,544	1,392,	3,844	1,181,	4,054	1,221,
<i>Totals Entered</i>	7,780	2,063,	265	7,703	2,120,	6,108	1,767,	6,897	2,082,
 CLEARED:—									
Russia	112	46,	411	82	31,	91	31,	81	28,
Sweden	119	25,	210	86	23,	100	25,	116	28,
Norway	380	94,	248	236	55,	227	51,	183	44,
Denmark	553	58,	105	432	46,	414	44,	404	46,
Prussia and Ger. Sts.	425	123,	289	687	163,	739	153,	594	134,
Holland and Belgium	351	53,	151	369	52,	438	68,	307	43,
France	1,118	115,	103	1,010	101,	1,223	127,	1,098	110,
Spain and Portugal	74	23,	311	77	26,	76	24,	77	21,
Italy & other Eupn. Sts.	224	72,	321	190	60,	97	32,	259	72,
United States	97	102,	1,052	177	178,	260	219,	377	357,
All other States	3	1,	333	6	2,	12	6,	5	2,
United Kingdm. & } Depds..... }	3,456	712,	206	3,352	737,	3,687	780,	3,501	885,
	5,971	1,882,	315	5,966	1,723,	5,792	1,640,	4,792	1,332,
<i>Totals Cleared</i>	9,427	2,594,	275	9,318	2,460,	9,479	2,420,	8,293	2,217,

GOLD AND SILVER BULLION AND SPECIE. — IMPORTED AND EXPORTED. — (United Kingdom.) — Computed Real Value for the First Three Months (January—March), 1864-63-62.

[000's omitted.]

(First Three Months.)	1864.		1863.		1862.	
	Gold.	Silver.	Gold.	Silver.	Gold.	Silver.
Imported from:—	£	£	£	£	£	£
Australia	669,	—	1,001,	—	1,661,	—
So. Amca. and W. } Indies	1,533,	2,195,	1,267,	2,019,	553,	1,307,
United States and } Cal.	1,632,	23,	2,496,	320,	1,208,	36,
	3,834,	2,218,	4,764,	2,339,	3,422,	1,343,
France	57,	464,	7,	302,	65,	249,
Hanse Towns, Holl. } & Belg.	80,	891,	181,	485,	344,	591,
Prtgl., Spain, and } Gbrltr.	14,	31,	3,	21,	7,	33,
Mlta., Trky., and } Egypt	6,	—	114,	1,	2,	5,
China	—	—	—	—	—	1,
West Coast of Africa	29,	—	28,	1,	38,	2,
All other Countries...	89,	35,	7,	2,	77,	7,
Totals Imported	4,109,	3,639,	5,104,	3,151,	3,955,	2,231,
Exported to:—						
France	1,726,	658,	1,294,	245,	1,214,	202,
Hanse Towns, Holl. } & Belg.	36,	236,	944,	148,	117,	91,
Prtgl., Spain, and } Gbrltr.	489,	6,	1,221,	—	486,	7,
	2,251,	900,	3,459,	393,	1,817,	300,
Ind. and China (viâ } Egypt)	835,	2,536,	610,	2,662,	353,	2,380,
Danish West Indies...	—	—	—	—	28,	4,
United States	6,	5,	2,	—	26,	—
South Africa	—	—	34,	11,	—	—
Mauritius.....	—	—	—	—	—	—
Brazil	536,	36,	350,	25,	5,	10,
All other Countries...	184,	34,	152,	25,	252,	13,
Totals Exported	3,812,	3,511,	4,607,	3,116,	2,481,	2,707,
Excess of Imports	297,	128,	497,	35,	1,474,	—
„ Exports	—	—	—	—	—	476,

REVENUE.—(UNITED KINGDOM.)—31ST MARCH, 1864-63-62-61.

Net Produce in YEARS and QUARTERS ended 31ST MARCH, 1864-63-62-61.

[000's omitted.]

QUARTERS, ended 31st March.	1864.	1863.	1864.		Corresponding Quarters.	
			<i>Less.</i>	<i>More.</i>	1862.	1861.
	£ Mlms.	£ Mlms.	£ Mlms.	£ Mlms.	£ Mlms.	£ Mlms.
Customs	5,533,	5,722,	,189,	—	5,724,	5,821,
Excise	5,127,	4,665,	—	,462,	5,044,	4,873,
Stamps	2,439,	2,374,	—	65,	2,294,	2,191,
Taxes	367,	357,	—	10,	355,	314,
Post Office	965,	955,	—	10,	905,	895,
Property Tax	14,431,	14,073,	,189,	,547,	14,322,	14,097,
	3,168,	3,890,	,722,	—	4,427,	4,024,
Crown Lands	17,599,	17,963,	,911,	,547,	18,749,	18,121,
	81,	79,	—	2,	77,	76,
Miscellaneous	1,309,	1,171,	—	,138,	780,	339,
<i>Totals</i>	18,989,	19,213,	,911,	,687,	19,606,	18,536,
			NET DECR. £224,657			

YEARS, ended 31st March.	1864.	1863.	1864.		Corresponding Years.	
			<i>Less.</i>	<i>More.</i>	1862.	1861.
	£ Mlms.	£ Mlms.	£ Mlms.	£ Mlms.	£ Mlms.	£ Mlms.
Customs	23,232,	24,034,	,802,	—	23,674,	23,306,
Excise	18,207,	17,155,	—	1,052,	18,332,	19,435,
Stamps.....	9,317,	8,994,	—	,323,	8,591,	8,348,
Taxes	3,218,	3,150,	—	68,	3,160,	3,127,
Post Office	3,810,	3,650,	—	,160,	3,510,	3,400,
Property Tax	57,784,	56,983,	,802,	1,603,	57,267,	57,616,
	9,084,	10,567,	1,483,	—	10,365,	10,924,
Crown Lands	66,868,	67,550,	2,285,	1,503,	67,632,	68,540,
	305,	300,	—	5,	295,	290,
Miscellaneous	3,035,	2,753,	—	,282,	1,747,	1,453,
<i>Totals</i>	70,208,	70,603,	2,285,	1,890,	69,674,	70,283,
			NET DECR. £391,598			

REVENUE.—UNITED KINGDOM.—QUARTER ENDED 31ST MARCH, 1864:—

An Account showing the REVENUE and other RECEIPTS of the QUARTER ended 31st March 1864; the APPLICATION of the same, and the Charge of the Consolidated Fund for the said Quarter, together with the Surplus or Deficiency upon such Charge.

Received:—

Surplus Balance beyond the Charge of the <i>Consolidated Fund</i> for the Quarter ended 31st December, 1863, viz.:—	£
Great Britain	—
Ireland	£978,219
	<hr/> 978,219
Income received in the Quarter ended 31st March, 1864, as shown in preceding page	18,989,089
Amount raised per Act 25 and 26 Victoria, cap. 78, on account of Fortifications, &c.	200,000
Amount received in the Quarter ended 31st March, 1864, in repayment of Advances for Public Works, &c.	323,680
	<hr/> £20,490,988
Balance, being the Deficiency on 31st March, 1864, upon the charge of the <i>Consolidated Fund</i> in Great Britain, to meet the Dividends and other charges payable in the Quarter to 30th June, 1864, and for which the Exchequer Bills (Deficiency) will be issued in that Quarter	722,330
	<hr/> £21,213,318

Paid:—

Amount applied out of the Income for the Quarter ended 31st March, 1864, in Redemption of the Exchequer Bills (Deficiency), for the Quarter ended 31st December, 1863, viz.:—	£
Total deficiency	£899,054
Deduct—Redeemed by Sinking Fund	207,286
	<hr/> 691,768
Amount applied out of the Income to <i>Supply Services</i> in the Quarter ended 31st March, 1864	10,629,065
Charge of the <i>Consolidated Fund</i> for the Quarter ended 31st March, 1864, viz.:—	
Interest of the Permanent Debt	£5,635,562
Terminable Debt	872,584
Principal of Exchequer Bills	893,100
Interest of „ „	88,452
„ Deficiency „	—
The Civil List	101,233
Other Charges on Consolidated Fund	579,760
Advances for Public Works, &c.	428,151
Sinking Fund	655,658
	<hr/> 9,254,490
Surplus Balance in Ireland beyond the Charge of the Consolidated Fund in Ireland for the Quarter ended 31st March, 1864	637,995
	<hr/> £21,213,318

CORN.—*Gazette Average Prices (ENGLAND AND WALES), First Quarter of 1864.*

[This Table is communicated by H. F. JADIS, ESQ., Comptroller of Corn Returns.]

Weeks ended on a Saturday 1864.			Weekly Average. (Per Impl. Quarter.)					
			Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
			s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
January	2	.....	39 10	31 8	18 9	30 —	33 8	33 1
"	9	.....	40 2	31 7	18 8	29 7	34 2	33 3
"	16	.....	40 11	31 10	18 10	28 —	33 7	33 1
"	23	.....	41 3	32 5	18 9	28 —	33 8	32 8
"	30	.....	40 8	32 1	18 11	31 8	33 3	32 10
Average for January ..			40 6	31 11	18 9	29 5	33 8	32 11
February	6	.....	40 4	32 —	18 9	29 —	33 8	33 —
"	13	.....	40 8	31 11	19 1	29 1	33 7	32 7
"	20	.....	41 1	32 —	19 8	28 10	33 2	32 5
"	27	.....	40 6	32 —	19 4	39 —	33 1	32 9
Average for February ..			40 8	32 —	19 2	31 6	33 4	32 11
March	5	.....	40 2	31 6	19 10	28 6	33 5	32 10
"	12	.....	40 1	31 5	19 8	29 2	32 7	33 —
"	19	.....	39 9	31 4	19 2	32 4	32 10	32 10
"	26	.....	39 11	30 10	19 —	28 —	32 8	33 3
Average for March			39 11	31 3	19 5	29 6	32 10	32 11
Average for the Quarter ..			40 5	31 9	19 1	30 1	33 4	32 11

RAILWAYS.—PRICES, Jan.—March;—and TRAFFIC, Jan.—March, 1864.

Total Capital Ex- pended Mlns.	Railway.	For the (£100). Price on			Miles Open.		Total Traffic first 13 Weeks. (unit 000's omitted.)		Traffic pr. Mile pr. Wk 13 Weeks.		Dividends per Cent. for Half Years.		
		1st Mar.	2nd Feb.	1st Jan.	'64.	'63.	'64.	'63.	'64.	'63.	30 Jun. '63.	31 Dec. '62.	30 Jun. '62.
£					No.	No.	£	£	£	£	s. d.	s. d.	s. d.
48,0	Lond. & N. Westn.	108 $\frac{3}{4}$	107	108 $\frac{3}{4}$	1,229	1,179	1,166,	1,055,	79	72	42 6	55 —	37 6
44,0	Great Western	65 $\frac{1}{4}$	65	67	1,056	1,056	755,	716,	59	54	20 —	30 —	5 —
15,0	" Northern.....	127	129	128 $\frac{1}{2}$	353	351	395,	342,	84	79	42 6	85 —	45 —
20,6	" Eastern	48 $\frac{1}{2}$	50	51	663	663	366,	341,	48	41	12 6	25 —	20 —
11,2	Brighton	106	104	110	261	250	190,	193,	82	65	50 —	70 —	50 —
14,9	South-Eastern	92 $\frac{3}{4}$	94 $\frac{1}{2}$	96 $\frac{3}{4}$	306	306	236,	226,	67	61	45 —	60 —	42 6
14,7	" Western	100 $\frac{1}{2}$	103 $\frac{1}{2}$	102 $\frac{1}{2}$	450	441	225,	225,	53	46	45 —	60 —	40 —
168,4		92 $\frac{1}{2}$	93 $\frac{1}{4}$	95	4,318	4,246	3,333,	3,098,	69	60	36 9	55 —	34 3
22,7	Midland.....	127 $\frac{1}{2}$	129	131 $\frac{1}{4}$	641	630	554,	493,	73	63	57 6	65 —	55 —
19,8	Lancsh. and York.	110 $\frac{1}{4}$	110 $\frac{1}{4}$	112 $\frac{1}{2}$	402	395	460,	410,	24	79	42 6	40 —	37 6
12,5	Sheffield and Man.	53	51	52	239	239	216,	186,	76	64	—	—	—
30,8	North-Eastern	102 $\frac{1}{4}$	103 $\frac{1}{2}$	105	1,095	1,079	672,	615,	50	46	42 6	50 —	42 6
85,8		96 $\frac{3}{4}$	98	100	2,377	2,343	1,902,	1,704,	56	63	47 6	51 8	45 —
9,7	Caledonian	122	121	122 $\frac{1}{2}$	245	234	222,	200,	70	67	52 6	60 —	50 —
5,5	Gt. S. & Wn. Irind.	97	99	99	373	329	92,	93,	23	23	42 6	50 —	50 —
269,4	Gen. aver.	96 $\frac{3}{4}$	97 $\frac{1}{4}$	98	7,313	7,152	5,549,	5,095,	61	58	38 —	50 —	35 9

Consols.—Money Prices 1st March, 91 $\frac{1}{8}$ to 91 $\frac{1}{4}$ de. and 91 $\frac{1}{8}$ to 91 $\frac{1}{4}$ for acc.—2nd February, 90 $\frac{1}{8}$ to 90 $\frac{1}{4}$ de.—1st January, 91 $\frac{1}{4}$ to 91 $\frac{3}{8}$ de. and 91 $\frac{1}{8}$ to 91 $\frac{1}{4}$ for acc.

Exchequer Bills.—1st March, 5s. dis. par.—2nd Feb., 10s. to 4s. d.—1st Jan. 9s. to 4s. d.

BANK OF ENGLAND.—WEEKLY RETURN.

Pursuant to the Act 7th and 8th Victoria, c. 32 (1844), for Wednesday in each Week, during the FIRST QUARTER (Jan.—March) of 1864.

[0,000's omitted.]

1	2	3	4	5	6	7
ISSUE DEPARTMENT.					COLLATERAL COLUMNS.	
Liabilities.	DATES.	Assets.			Notes in Hands of Public. (Col. 1 minus col. 16.)	Minimum Rates of Discount at Bank of England.
Notes Issued.	(Wednesdays.)	Government Debt.	Other Securities.	Gold Coin and Bullion.		
£	1864.	£	£	£	£	1864. Per ann.
Mlms.		Mlms.	Mlms.	Mlms.	Mlms.	
28,16	Jan. 6	11,01	3,63	13,51	20,71	20 Jan. 8 p. ct.
27,69	„ 13	11,01	3,63	13,04	20,76	
26,95	„ 20	11,01	3,63	12,30	20,82	
27,00	„ 27	11,01	3,63	12,35	20,28	
27,27	Feb. 3	11,01	3,63	12,62	20,55	11 Feb. 7 „
27,40	„ 10	11,01	3,63	12,75	20,16	
27,51	„ 17	11,01	3,63	12,86	20,14	
27,70	„ 24	11,01	3,63	13,05	19,67	
27,91	Mch. 2	11,01	3,63	13,26	20,24	25 „ 6 „
27,76	„ 9	11,01	3,63	13,11	20,02	
27,86	„ 16	11,01	3,63	13,21	19,85	
28,35	„ 23	11,01	3,63	13,70	19,85	
28,06	„ 30	11,01	3,63	13,41	20,40	

BANKING DEPARTMENT.

8	9	10	11	12	13	14	15	16	17	18
Liabilities.					DATES. (Wdnsdys.)	Assets.				Totals of Liabili- ties and Assets.
Capital and Rest.		Deposits.		Seven Day and other Bills.		Securities.		Reserve.		
Capital.	Rest.	Public.	Private.			Government.	Other.	Notes.	Gold and Silver Coin.	
£	£	£	£	£	1864.	£	£	£	£	£
Mlms.	Mlms.	Mlms.	Mlms.	Mlms.		Mlms.	Mlms.	Mlms.	Mlms.	Mlms.
14,55	3,30	10,00	13,05	,60	Jan. 6	10,95	22,43	7,44	,68	83,03
14,55	3,36	5,26	15,41	,63	„ 13	11,07	20,55	6,92	,66	78,45
14,55	3,40	5,68	13,88	,61	„ 20	11,07	20,27	6,12	,66	76,29
14,55	3,42	6,33	13,40	,58	„ 27	11,07	19,84	6,71	,67	76,61
14,55	3,45	6,74	13,37	,60	Feb. 3	11,12	20,21	6,72	,67	77,47
14,55	3,55	7,25	12,88	,54	„ 10	11,12	19,70	7,24	,71	77,57
14,55	3,58	7,08	13,30	,54	„ 17	11,12	19,85	7,36	,72	78,13
14,55	3,53	8,15	12,42	,53	„ 24	11,17	19,23	80,2	,76	78,40
14,55	3,77	7,89	13,54	,55	Mch. 2	11,17	20,70	7,67	,79	80,64
14,55	3,79	8,86	12,43	,53	„ 9	11,17	20,49	7,73	,77	80,35
14,55	3,88	8,57	13,10	,48	„ 16	11,17	20,65	8,01	,73	81,17
14,55	3,87	9,84	12,48	,51	„ 23	11,27	20,74	8,49	,74	82,51
14,55	3,88	10,28	12,65	,49	„ 30	11,27	22,19	7,65	,75	83,75

CIRCULATION.—COUNTRY BANKS.

Average Amount of Promissory Notes in Circulation in ENGLAND and WALES on Saturday, in each Week during the FIRST QUARTER (Jan.—March) of 1864; and in SCOTLAND and IRELAND, at the Three Dates, as under.

ENGLAND AND WALES.				SCOTLAND.				IRELAND.		
DATES.	Private Banks. (Fixed Issues, 4,26.)	Joint Stock Banks. (Fixed Issues, 3,27.)	TOTAL. (Fixed Issues, 7,53.)	Four Weeks, ended	£5 and upwards.	Under £5.	TOTAL. (Fixed Issues, 2,75.)	£5 and upwards.	Under £5.	TOTAL. (Fixed Issues, 6,35.)
1864.	£ Mlns.	£ Mlns.	£ Mlns.	1864.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.
Jan. 2	3,09	2,79	5,88	Jan. 9	1,58	2,72	4,30	2,68	2,98	5,66
„ 9	3,21	2,89	6,10							
„ 16	3,24	2,94	6,18							
„ 23	3,23	2,92	6,15							
„ 30	3,19	2,87	6,06							
Feb. 6	3,15	2,87	6,02	Feb. 6	1,54	2,55	4,09	2,70	2,96	5,66
„ 13	3,13	2,86	5,99							
„ 20	3,12	2,87	5,99							
„ 27	3,08	2,85	5,93							
March 5	3,09	2,87	5,96	March 5	1,54	2,46	4,00	2,67	2,89	5,56
„ 12	3,09	2,89	5,98							
„ 19	3,09	2,90	6,00							
„ 26	3,13	2,97	6,10							

FOREIGN EXCHANGES.—Quotations as under, LONDON on Paris, Hamburg & Calcutta; —and New York, Calcutta, Hong Kong & Sydney, on LONDON—with collateral cols.

1	2	3	4	5	6	7	8	9	10	11	12	13	14
DATES.	Paris.				Hamburg.			New York.	Calcutta.		Hong Kong.	Sydney.	Standard Silver in bars in London.
	London on Paris.	Bullion as arbitrated.		Prem. or Dis. on Gold per mille.	London on Hambg.	Bullion as arbitrated.			India Council.	At Calcutta on London.			
		Agnst. Engd.	For Engd.			Agnst. Engd.	For Engd.						
	3 m. d.				3 m. d.			60 d. s.	60 d. s.	6 m. s.	6 m. s.	30 d. s.	pr. oz.
1864.		pr. ct.	pr. ct.			pr. ct.	pr. ct.	pr. ct.	d.	d.	d.	pr. ct.	d.
Jan. 2..	25·72½	—	·1	3 pm	13·8½	—	—	165	23¾	26	57½	2 pm.	61½
„ 16..	·75	—	„	4 „	·7½	—	—	166¾	24	„	„	„	62
Feb. 6..	·85	—	„	„	·8¼	—	·2	172	„ ⅛	27	58	„	61⅜
„ 20..	·80	—	·3	„	·8½	—	—	173	„	25½	„ ¼	—	„ ¼
Mar. 5..	·72½	—	·1	4 „	·8¼	—	—	174	23⅞	„ ⅝	„	—	61½
„ 19..	·70	—	·2	3 „	„	—	·3	176	„ ¾	„ ⅝	„	—	„

COST OF A COMPLETE SET

OF THE

JOURNAL

OF

THE STATISTICAL SOCIETY,

1838—1863.

	£	s.	d.
Vol. I. (1838.) 9 Numbers at 1s. 6d.	-	13	6
Vol. II. (1839.) 3 Numbers at 1s. 6d. and 3 Parts at 2s. 6d.	-	12	-
Vols. III—XI. (1840-48.) 9 vols. at 10s.	4	10	-
Vol. XII. (1849.) Including a double number.....	-	12	6
Vols. XIII—XIX. (1850-56.) 7 vols. at 10s.	3	10	-
Vol. XX. (1857.)	-	11	-
Vol. XXI. (1858.)	-	12	-
Vol. XXII. (1859.)	-	11	6
Vol. XXIII. (1860.)	-	13	-
Vols. XXIV—XXV. (1861-62.) 2 vols. at 15s.	1	10	-
Vol. XXVI. (1863.)	-	14	-
	<u>£14</u>	<u>9</u>	<u>6</u>
Discount 40 per cent. (<i>allowed to Fellows only</i>)	5	16	-
	<u>£8</u>	<u>13</u>	<u>6</u>
General Analytical Indexes:—			
To the First Fifteen Volumes (1838-52)	-	2	6
„ Last Ten Volumes (1853-62)	-	2	6
	<u>-</u>	<u>5</u>	<u>-</u>
	<u>£8</u>	<u>18</u>	<u>6</u>

By a resolution of the Council, dated 12th May, 1854, the price of back numbers of the Journal of the Society, charged to Fellows, was raised from one-half to three-fifths of the publishing price.

Any single number may be had, *by Fellows only*, at the Society's Rooms, 12, St. James's Square, S.W.

* * * The General Analytical Indexes are sold to the Public at Three Shillings and Sixpence each.

JOURNAL OF THE STATISTICAL SOCIETY,

SEPTEMBER, 1864.

The STATISTICS of the ROMAN CATHOLICS in ENGLAND and WALES.
 By WILLIAM GOLDEN LUMLEY, ESQ., LL.M., of the Middle
 Temple, Barrister-at-Law, and one of the Honorary Secretaries
 of the Statistical Society.

[Read before the Statistical Society, 17th May, 1864.]

HIS Eminence Cardinal Wiseman, in an address delivered to the Catholic Congress, at Malines, on the 21st August, 1863, which has been lately published in English, states this proposition: "You are aware, gentlemen, that Catholicism in England is in a progressive state. This is a truth not only recognized by all the members of the Catholic Church, but admitted also by those who do not belong to her. Everybody in England seems to acknowledge that Catholicism is daily gaining ground upon Protestantism. * * *

"A few facts will enable you better to judge of the importance of this progress, and these facts will consist of simple statistics carefully framed. There is no eloquence more conclusive or more persuasive than that of figures on a subject like this, and all fear of exaggeration will be thus entirely avoided."

The Cardinal then proceeds to show by figures, that the number of priests has increased in England in the following manner:—

In 1830 there were 434 priests, in 1863 there were 1,242; in 1830 the churches were 410, in 1863 they were 872. There were 16 convents in 1830, the number has arisen in 1863 to 162. In 1830 there were no houses for religious men, but in 1850 there were 11. In 1863 the number amounts to 53.

In a subsequent passage it is stated, that in 1826 there were in London 48 priests; in 1851, 113; in 1863, 194; now (*i.e.* in 1864), 200. The number of the churches for these three periods respectively, amounts to 24, 46, and 102. At the first of these dates there was but one convent, at the second 9; now there are above 25; lastly, while, in 1826, religious houses of men and institutions of Catholic charity had no place in the statistics of the diocese, the first now amounts to 15, the second to 34.

These are the statistics supplied by the address. The other topics which, in the opinion of his Eminence, establish his proposition, are of a political and social character, and are not open to discussion in this place.

It must be observed that no authority is cited for the figures set out in the discourse; they rest upon the authority of the Cardinal's own statement.

Taking that statement as it is, there is something remarkable about it. In London there were in 1826, 48 priests to 24 churches, *i.e.*, 2 to each; but it seems that in 1830, though there were 410 churches in all England and Wales, there were but 434 priests, not more than one to each church; and in 1863, to 872 churches there were 1,242 priests, *i.e.*, only $1\frac{1}{2}$ to each. There is therefore no great increase in the priesthood in reference to the congregations.

And here it is to be observed that Mr. H. Mann, in his Report on the Census of 1851 [Part on Religious Worship] (quoting from a Roman Catholic work on Catholic statistics), gives the number of chapels for 1830 as 392, being 18 less than the number stated by his Eminence.

With reference also to the convents and religious houses mentioned by the Cardinal, the Rev. F. Signini, Catholic priest at Cardiff, in a letter to the Committee of Council on Education, lately published in a Parliamentary Paper of the House of Commons of this Session, No. 215, writes thus:—

“The convent is nothing but our (school) mistress' house, containing 3 religious sisters employed in the schools, and one lay sister for the house work, though it is usual for Catholics to call any house inhabited by nuns a *convent*.”

Accordingly, in the debate in the House of Commons on the 8th April last, Lord Edward Howard gave this explanation as to the number of convents in this country: “The fact is that, in ninety-nine cases out of a hundred, the convents are established in this way. Two or three nuns go here and there and set up a school, Catholic ladies and gentlemen know that nuns are the best instructors of children, that they win them from vice, and accordingly those ladies and gentlemen are anxious to get nuns to set up schools.”*

The convents, therefore, whose increase is so much noted, are not those formidable habitations which are heard of in foreign countries, where the young females of the upper and middle ranks of society pass many years of their lives in religious seclusion and restraint.

Now, a variety of facts have been collected from official reports, which elucidate the statistics of the Roman Catholics in England, and it will be seen to what extent they support the statement made in this remarkable essay.

In the first place, it will be remembered that returns were obtained at the Census of 1851, of the accommodation for the worshippers of all religions at that time in this country, and though some complaint of incompleteness has been occasionally made on the part of the Established Church, none has been made from any other quarter.

* See the “Times” for Saturday, 9th April.

Mr. Mann, in his Report, states, with reference to the Roman Catholics, "that the number of chapels from which returns had been received was 570, with sittings (after an allowance for 48 chapels making no return upon this point) for 186,111. The number of attendants on the Census Sunday, making an estimated addition for 27 chapels, the returns for which were silent upon this point, was, morning, 252,783; afternoon, 53,967; evening, 6,880." He explains how it happened that the number of attendants in the morning exceeded that of the sittings.

In this Report Mr. Mann shows that there were then 14,077 churches belonging to the Church of England, and 20,390 places of worship belonging to all other religious bodies. He shows that from 13,051 returns relating to the former, there was accommodation for 4,922,412 persons, and, making an estimate for the rest, he estimates the accommodation as sufficient for 5,317,915 persons. And he shows that the attendance on the Census Sunday was, in the morning, 2,541,244; afternoon, 1,890,764; evening, 860,543. This refers to the Established Church. It appears from the same report that accommodation was also provided by sittings in other places of worship for 5,094,648 persons, which includes the sittings already noticed as being provided for the Roman Catholics, amounting to 186,111.

The ground, therefore, which is to be gained before the advent looked for by his Eminence, is indeed of very great extent.

Now, as to the number of the priests. According to the Report of the Census Commissioners for 1851, Population Tables II, Summary Table XXVIII, the number of clergymen of the Established Church in England amounted in that year to 17,320, that of the Protestant ministers to 6,405, being together 23,725, the number of Roman Catholic priests, *and other religious teachers*, to 2,253. In the introductory essay, p. lxxxvi, the Roman Catholic priests for Great Britain are set down as 1,093. This number includes those in England and Scotland, and the precise number of priests in England alone is not given. The return of the occupations for Scotland, gives the number of priests, *and other religious teachers*, as 460, leaving 1,793 as the proper number of both for England. It seems, therefore, that it would be not unreasonable to place the number of priests in England in 1851, at 1,000.*

In the Report for 1861, Table XVII, the number of clergymen of the Established Church was found to be for that year 19,195; of Protestant ministers, 7,840; Missionary scripture readers and itinerant preachers, 1,916 males, 118 females; and Roman Catholic priests, 1,216.

It is also to be noticed that in this table appears for the first time the number of nuns, who are set down as 585.

* I have since found that the "Report on the Census," vol. iii, p. 33, gives the number as 966.—W. G. L.

It appears, then, that the total number of the religious clergy and ministers in 1851 was 25,978, and in 1861 was 30,285. The total increase was 4,307; that of the Established clergy was 1,875, or 10·8 per cent.; that of the Protestant ministers 1,435, or 22 per cent.; and that of the Roman Catholic priests, 216, or 21·6 per cent.

Taking the clergy, the ministers, and the priests together, the number will be altogether 28,251; of these the proportions are—clergy of the Established Church 67·9 per cent., of the Protestant ministers 27·7 per cent., of Catholic priests 4·3 per cent.

Hence, though the number of priests has increased in a greater ratio than the members of the clergy of the Established Church, they have not increased in so great a ratio as the Protestant ministers. Of course the demand for the clergy depends upon the number of churches, which is limited by that of the parishes, whereas the demand for ministers and priests depends on the congregations, which is not subject to any arbitrary limit.

Of those congregations, some information may be obtained from the following source:—

By the Act 6 and 7 Wm. IV, cap. 85, intituled an “Act for “Marriages in England,” places of worship for the solemnization of marriages, otherwise than according to the forms of the Church of England, are required to be registered with the Registrar-General, and in his Annual Reports he has shown the total number so registered.

In his First Report he showed, at p. 9, that in the year 1838, 1,332 places were so registered, and of 1,257 he was able to set forth the religious denominations.

According to this information, there were then 197 places belonging to the Roman Catholics, nearly one-sixth of the whole.

In the Report for 1841, the number of such places was 263, out of a total of 1,922, much less than one-sixth.

It is not necessary to go through the whole detail until 1851, but from that year to 1861 the following table is extracted:—

Year.	Total Number.	Annual Increase.	Roman Catholic Chapels.	Increase.	Proportion of Roman Catholics to the Total.
1851	3,228	—	378	—	·117
'52	3,340	112	391	13	·117
'53	3,453	113	409	18	·118
'54	3,560	107	421	12	·118
'55	3,658	98	440	19	·120
1856	3,811	163	473	33	·124
'57	3,925	114	490	17	·125
'58	4,072	147	505	15	·124
'59	4,228	156	520	15	·123
'60	4,403	175	540	20	·121
1861	4,564	161	551	11	·120

The increase in ten years of these registered places of worship, was 1,336, of which 1,163 were for Nonconformists, and 173 Roman Catholics, while, during the period from 1851 to October, 1860, according to the Parliamentary Return, No. 556, of the Session 1861, the number of new churches of the Established Church which were consecrated, was 108.

It appears that for a time the number of Roman Catholic churches and chapels was increasing in proportion to that of the other places of religion, but since 1857 the ratio of increase has decreased.

It is not without interest to see how the 378 Roman Catholic churches and chapels registered up to the year 1851, and the 551 registered up to the year 1861, were locally situated, and this is shown by the following table, which is extracted from the Fourteenth and Twenty-Fourth Annual Reports of the Registrar-General:—

	1851.	1861.		1851.	1861.
I. LONDON.			VI. WEST MIDLAND DIVISION.		
Middlesex (<i>part of</i>)	—	32	Gloucestershire	6	10
Surrey (<i>part of</i>)	—	8	Herefordshire	2	2
Kent (<i>part of</i>)	—	4	Shropshire	7	10
II. SOUTH EASTERN DIVISION.			Staffordshire	23	34
Surrey	6	—	Worcestershire	8	8
Surrey (<i>extra metropo-</i> } <i>litan</i>)	—	6	Warwickshire	14	21
Kent	10	—	VII. NORTH MIDLAND DIVISION.		
Kent (<i>extra metropolitan</i>)	—	11	Leicestershire	8	8
Sussex	3	7	Rutlandshire	—	—
Hampshire	9	11	Lincolnshire	6	6
Berkshire	5	7	Nottinghamshire	4	4
III. SOUTH MIDLAND DIVISION.			Derbyshire	7	9
Middlesex	22	—	VIII. NORTH WESTERN DIVISION.		
Middlesex (<i>extra metro-</i> } <i>politan</i>)	—	6	Cheshire	7	13
Hertfordshire	1	1	Lancashire	87	127
Buckinghamshire	2	2	IX. YORK DIVISION.		
Oxfordshire	6	8	West Riding	} 45 {	36
Northamptonshire	2	3	East „		10
Huntingdonshire	—	—	North „		12
Bedfordshire	1	1	X. NORTHERN DIVISION.		
Cambridgeshire	1	1	Durham	16	25
IV. EASTERN DIVISION.			Northumberland	12	17
Essex	6	10	Cumberland	4	8
Suffolk	4	4	Westmoreland	1	1
Norfolk	5	8	XI. WELSH DIVISION.		
V. SOUTH WESTERN DIVISION.			Monmouthshire	8	9
Wiltshire	2	3	South Wales	3	10
Dorsetshire	6	8	North „	3	7
Devonshire	4	8			
Cornwall	3	6			
Somersetshire	5	9			

In the Report for 1851, there was no division into registration counties; hence the metropolis, or London, was not distinguished, and must be taken from the three counties of Middlesex, Kent, and Surrey. In 1851, the total number for those three counties was 38; the total number in 1861, was 61; and in the latter year, the number for London was 44.

From this table it appears that the greatest number of Roman Catholic churches is in Lancashire, London, West Riding of Yorkshire, Staffordshire, Durham, and Warwickshire; and in all of these counties there is a large manufacturing population, among whom will be found a considerable proportion of Irish.

It will be observed that the number of churches registered in the metropolis in 1861, was 44. But Cardinal Wiseman, as stated above, asserts that in 1863 the number of churches for London was 102. Now, assuming that there are some places not registered where the Catholic services are performed, the difference between 44 in 1861, and 103 in 1863, is so great as to render any explanation very difficult.

There is some ambiguity as to the term London, as used by his Eminence, but it can hardly exceed by much the term as defined by the Registrar-General.

There are no official means of ascertaining the exact number of Catholics in England by reference to their births or to their deaths; because, in the statutes which provide for the registration of births and deaths, there is no provision which requires the religion of the parents of the child whose birth is registered to be recorded, nor that of the person whose death is registered.

But some light is thrown upon this point by reference to the registers of marriages.

The Registrar-General, under the provision of the above statute 6 and 7 Wm. IV, c. 85, keeps the registers of all the marriages which are solemnized in England, and the total numbers are shown in his annual reports.

In his tables, he distinguishes between those solemnized according to the Establishment, and those solemnized and contracted otherwise. Until 1844 he did not distinguish those celebrated according to the Roman Catholic faith. But from that year to the last published Report for 1861 he has done so, and the following table shows the total number of marriages registered by him, and the total number of those celebrated between Roman Catholics, with the ratio of the latter to the former:—

Marriages Registered in England.

	Total Number.	Roman Catholics.	Ratio of the Roman Catholics to the Total.
1844.....	132,249	2,280	·0172
'45.....	143,743	2,816	·0190
1846.....	145,664	3,027	·0200
'47.....	135,845	2,961	·0210
'48.....	138,230	3,658	·0260
'49.....	141,883	4,190	·0290
'50.....	192,744	5,623	·0360
1851.....	154,206	6,570	·0426
'52.....	158,782	7,479	·0471
'53.....	164,520	8,375	·0509
'54.....	159,727	7,813	·0490
'55.....	152,113	7,344	·0482
1856.....	159,337	7,527	·0472
'57.....	159,097	7,360	·0462
'58.....	156,070	6,643	·0420
'59.....	167,723	7,756	·0460
'60.....	170,156	7,800	·0464
1861.....	163,766	7,782	·0473

This table exhibits a most remarkable result in the early years. During the first five years there was a slow annual increase, but at the end of that period a most rapid increase occurred, so that in 1851 there were more than twice as many marriages as in 1846. In 1853 the number was the highest. Thenceforth there has been a decline, though in the last years of the series there has been a slight return to the increasing ratio.

But now let other tables be examined.

Year.	Total Number of Marriages.	Those of the Established Church.	Ratio.	Those not of the Established Church, excluding the Catholics.	Ratio.	Ratio of Roman Catholic Marriages.
1844....	132,249	120,009	·915	9,960	·075	·0172
'45....	143,743	129,515	·901	11,412	·079	·0190
1846....	145,664	130,509	·893	12,128	·083	·0200
'47....	135,845	120,876	·899	12,008	·088	·0210
'48....	138,230	121,469	·878	13,103	·093	·0260
'49....	141,883	123,182	·868	14,502	·102	·0290
'50....	152,744	130,959	·857	16,162	·105	·0360
1851....	154,206	130,958	·849	16,678	·108	·0426
'52....	158,782	133,882	·842	17,421	·109	·0471
'53....	164,520	138,042	·833	16,103	·099	·0599
'54....	159,747	134,109	·833	17,805	·111	·0490
'55....	152,113	127,751	·839	17,018	·111	·0482
1856....	159,337	133,619	·839	18,191	·114	·0472
'57....	159,097	131,031	·823	20,706	·13	·0462
'58....	156,070	128,082	·820	21,345	·136	·0420
'59....	167,723	136,210	·812	23,757	·141	·0460
'60....	170,156	137,370	·807	24,986	·146	·0464
1861....	163,706	130,697	·798	25,227	·154	·0473

This table exhibits a remarkable and somewhat unexpected result, inasmuch as it shows a steady and continuous decline in the marriages according to the Established Church, as compared with others. The gain to the Catholics has been of some trifling extent, but that to other Nonconformists has been very considerable.

In 1851, out of 1,000 marriages, there were 849 according to the Church of England, 108 Nonconformists, and 43 according to the rites of the Roman Catholic Church. In 1861, out of 1,000, there were 798 according to the Church of England, 154 Nonconformists, and 48 of the Roman Catholic Church. The gain in the second class is 46, but in the third only 5. This is not a very alarming progress in the rate of conversion.

But these tables afford a means of arriving at a reasonable estimate of the numbers of the Roman Catholics themselves. In the Registrar-General's Twenty-Fourth Annual Report is given a table showing the proportion of marriages to 100 persons living, in a series of years, from 1838 to 1861.

In 1844 it was $\cdot 801$, in 1851 it was $\cdot 858$, and in 1861 it was $\cdot 814$. Now, referring to the Roman Catholic marriages above set forth for those years, and applying these scales, it will be found that, according to this computation, there were in round numbers about 300,000 Catholics in England in 1844, when the estimated population was 16,529,000, or 1·8 per cent.; 750,000 in 1851, when the population was returned at 17,982,849, or 4·2 per cent., and 900,000 in 1861, when the population was found to be 20,119,496, or 4·4 per cent. The increase in the first period of 7 years was $2\frac{1}{2}$, whereas in the second period of 10 years it was only $\frac{1}{2}$.

It is obvious that this is the result of some special and peculiar circumstance, and is not produced by the action of a progressing conversion of the inhabitants of this island. The increase was for a time very rapid, but then came a strong check, and the progress is slackened.

There is no great difficulty in rendering a complete explanation of this phenomenon.

The tables exhibit the return of all the marriages which are solemnized in England, consequently it includes those of the Irish and of foreigners. Now, it is a matter of notoriety that there has been a great immigration of Irish and of foreigners into England during the last 20 years. They marry in this country as elsewhere, and their marriages are included in these tables.

According to the Reports of the Census Commissioners, the number of foreigners in England in 1851 was 50,289; whereas, in 1861 they were 84,090, of whom 73,434 were Europeans. The number of Irish in England in 1841 was 289,404, *i.e.*, 1·8 per cent. upon a population of 15,900,000; in 1851 it was 519,959, or 2·9 per

cent. upon a population of 18,000,000; in 1861 it was 601,634, or 3·0 per cent. upon a population of 20,000,000.

Thus in 1851 the number of Catholics was 4·2 per cent. of the population, and that of the Irish 2·9 per cent.; in 1861 the number of Catholics was 4·4 per cent., and that of the Irish 3 per cent.

Now, the greater proportion of foreigners are French, Italian, Poles, Belgians, and Spanish, who are almost all Catholics, or Germans, who are partly of the same religion; while of the Irish in Ireland, it is not an unreasonable estimate to calculate five-sixths to be of the Roman Catholic faith.

The immigration of the Irish into England coincided with the increase in the Catholic marriages, and as that immigration has slackened, so the increase of those marriages has diminished, though the number of their children born in England, being counted with those born of English parents, may somewhat embarrass their accurate discrimination in the enumeration of the English Catholics.

Some farther opportunities have been afforded of supplying statistical information with reference to the present condition of the Catholic inhabitants of this country. These are obtained from certain returns respecting the Catholic paupers, the Catholic schools for the poor, and the Catholic prisoners.

The following tables are therefore supplied:—

First, as to Catholic paupers.

In a Return presented to the House of Commons in 1861, is given the number of in-door paupers belonging to the Church of England, of Roman Catholic, and of persons of other religious denominations, on the 1st January, 1860.

The total numbers are given thus:—

Adults and Children under 16 Years of Age.

	Adults.	Children.	Total.
Church of England	60,632	35,592	96,224
Roman Catholics	5,752	2,378	8,130
Other Religious Denominations	6,033	2,257	8,290

The above number of Roman Catholics are thus distributed:—

Counties.	Adults.	Children.
Bedfordshire	None	None
Berkshire	5	3
Bucks	None	None
Cambridgeshire	19	11
Cheshire	64	59
Cornwall.....	4	3
Cumberland	60	25

Counties.	Adults.	Children.
Derbyshire	21	19
Devonshire.....	16	8
Dorsetshire.....	3	4
Durham	76	—
Essex	68	40
Gloucestershire	60	16
Herefordshire.....	5	—
Herts	10	3
Huntingdonshire	2	—
Kent	136	41
Lancashire	2,099	1,181
Leicestershire.....	13	8
Lincolnshire	35	20
Middlesex	1,640	292
Monmouth	35	21
Norfolk	12	8
Northamptonshire	7	8
Northumberland ..	95	81
Nottinghamshire	35	22
Oxfordshire	2	2
Rutland	—	—
Salop	14	7
Somersetshire.....	15	3
Southampton	38	14
Staffordshire	95	65
Suffolk.....	5	1
Surrey.....	459	87
Sussex.....	17	10
Warwick.....	130	61
Westmoreland	4	—
Wilts	8	2
Worcestershire	39	29
York—East Riding	44	39
„ North „	26	10
„ West „	271	125
WALES.		
Anglesey	—	—
Brecknock	1	—
Cardigan	—	—
Carmarthenshire	—	—
Carnarvonshire	—	—
Denbighshire	1	1
Flintshire	1	—
Glamorganshire.....	53	37
Merionethshire	—	—
Montgomeryshire	—	—
Pembrokeshire	1	2
Radnorshire	—	—

There is no doubt that this return, which is confined to in-door paupers, is inaccurate with reference to the metropolis. Some large parishes made no return at all, and in others there had been no sufficient discrimination of the Roman Catholic inmates, particularly in reference to the children.

Here the result is much the same as was shown above in reference to the situation of the Catholic churches. There is not the same severance of the metropolis from the counties in which it is situated. But the gradation is thus:—Lancashire, Middlesex, Surrey, West Riding, Kent, Warwick, Staffordshire, Northumberland and Durham.

The Catholic paupers are found in the largest proportions in London and the manufacturing counties.

Secondly, as to the Catholic schools for the poor.

The following table shows the number of schools built with aid from the Parliamentary grant, and the number of scholars in average attendance, taken from the Reports of the Committee of Council on Education:—

	Description of School.							
	National or Church of England.		British and Foreign.		Wesleyan.		Roman Catholics in Great Britain.	
	Number of New Schools.	Number of Scholars.	Number of New Schools.	Number of Scholars.	Number of New Schools.	Number of Scholars.	Number of New Schools.	Number of Scholars.
1855	133	83,585	7	10,818	2	6,612	2	1,349
1856	133	162,863*	6	25,547*	11	11,103*	3	7,971*
'57	162	312,709	8	56,355	13	26,529	7	22,593
'58	191	380,779	4	68,945	21	28,841	10	26,779
'59	189	447,101	12	82,777	12	36,458	8	33,567
'60	180	463,461	10	82,997	11	38,918	7	39,690
1861	167	549,362	5	99,466	6	46,000	10	44,859
'62	123	576,067	5	99,274	8	45,440	2	47,265

* In the middle of this year the capitation grant which had previously been confined to the rural districts, was extended to the whole of England and Wales.

This table shows no material increase in the number of new schools provided for Roman Catholic children, taken in comparison with those provided for all the other classes; but though the actual number of Roman Catholic scholars is very small as compared with the others, viz., 47,265 to 720,781, about one-sixteenth, it must be admitted that, regarding the rate of increase in all the classes, it will be found that the ratio of increase between 1856 and 1862 is greatest in the number of Roman Catholic scholars.

The numbers are as follow :—

National Schools.	British and Foreign.	Wesleyan.	Roman Catholic.
263,358 or '84 per cent.	42,919 or '76 per cent.	18,911 or '71 per cent.	24,672 or 1'09 per cent.

It must be remembered, however, that the first year in the above table was almost the commencement of the actual movement in respect of the Roman Catholic schools, whereas the other classes of schools have been very long in existence.

In the Report of the Commissioners appointed to inquire into the state of popular education in England, published in 1861, there is a large amount of statistical information, and the following table is extracted from that Report, and relates to the year 1858. It is necessary to observe, that the schools herein referred to are the separate departments of schools, and not the separate institutions, and the scholars are taken from those on the books, whereas in the table given from the Reports of the Committee of Council, the numbers given are those of the average attendants.

Counties.	Number of Roman Catholic Schools.	Number of Roman Catholic Scholars.	Income Exclusive of Government Aid.
			£ s. d.
Bedford	—	—	—
Berks	5	221	31 10 —
Bucks	1	60	*
Cambridge	2	69	—
Chester	13	1,427	513 2 —
Cornwall	5	261	*
Cumberland	5	620	110 — —
Derby	—	—	—
Devon	5	352	*
Dorset	2	119	*
Durham	17	2,322	552 10 —
Essex	8	296	*
Gloucester (including Bristol) ...	15	1,511	600 — —
Hereford.....	—	—	—
Hertford	2	64	*
Huntingdon	—	—	—
Kent	18	1,826	185 — —

* No return was received from these counties.

Counties.	Number of Roman Catholic Schools.	Number of Roman Catholic Scholars.	Income Exclusive of Government Aid.
			£ s. d.
Lancaster	200	27,585	4,968 19 -
Leicester	3	208	226 10 -
Lincoln	2	118	27 - -
Middlesex (including London)....	117	15,574	300 - -
Monmouth	4	460	22 - -
Norfolk	7	322	92 - -
Northampton	1	20	-
Northumberland	15	3,016	650 9 -
Nottingham	4	772	361 - -
Oxford.....	5	221	85 - -
Rutland	—	—	—
Salop	3	134	31 - -
Somerset	11	532	199 - -
Southampton	18	850	*
Stafford	42	4,237	1,256 7 -
Suffolk.....	1	25	20 - -
Surrey	34	3,512	17 - -
Sussex	7	574	160 16 -
Warwick.....	32	3,287	975 2 -
Westmoreland	1	58	22 - -
Wilts	3	216	*
Worcester	9	511	82 10 -
York	60	6,900	*
Anglesea	—	—	—
Brecon.....	—	—	—
Cardigan.....	—	—	—
Carmarthen	—	—	—
Carnarvon.....	—	—	—
Denbigh	1	77	40 - -
Flint	6	425	197 - -
Glamorgan	6	989	308 - -
Merioneth	—	—	—
Montgomery	—	—	—
Pembroke	—	—	—
Radnor	—	—	—

* No return was received from these counties.

In this year the total number of schools, *i.e.*, departments of schools, was 22,647; of these the number of Roman Catholic schools was 743. The total number of scholars inscribed on the books was 1,549,312; of these the number of Roman Catholic scholars was 85,866. The total annual income was 1,019,068*l.*, and the amount returned for Roman Catholic schools was 12,042*l.* 15*s.*

Here also it appears that the greatest number of poor Roman Catholic children are to be found in Lancashire, Middlesex, Yorkshire, Staffordshire, Surrey, Warwickshire, Northumberland, and Durham.

This is nearly the same order as previously noticed.

Thirdly, as to Catholic prisoners.

Two returns of the House of Commons, the first in 1862 (Parliamentary Paper, No. 233), and the second in 1864 (Parliamentary Paper, No. 150), give for each prison in the kingdom on the 1st day of January, 1862, and the 1st day of January, 1864, respectively, the numbers of prisoners of each religious denomination, as entered on their caption, with other particulars, and from these returns the following tables have been extracted:—

Convict Prisons.	1st January, 1862.		1st January, 1864.	
	Total.	Roman Catholic.	Total.	Roman Catholic.
Chatham	1,094	199	1,096	71
Portsmouth	585	88	1,011	566
Portland	1,399	216	1,294	77
Dartmoor	1,095	181	742	113
Wakefield	396	124	398	14
Millbank	982	150	1,017	409
Pentonville;	575	73	521	4
Brixton	624	234	584	90
Fulham Refuge	226	60	176	51
Woking Invalid	402	63	552	95
Parkhurst (male and female)	212	27	575	257
Broadmoor Asylum	—	—	104	—
Leicester	92	11	—	—
Totals	7,682	1,426	8,070	1,747

Ratio of the Roman Catholic convict prisoners in 1862, 18·5 per cent.; in 1864, 21·4 per cent.

County and Borough Gaols and Houses of Correction.	1st January, 1862.		1st January, 1864.	
	Total.	Roman Catholic.	Total.	Roman Catholic.
ENGLAND.				
Bedford County Gaol	93	5	179	10
Berks County Gaol and House of Correction, Reading }	129	2	120	5
County Gaol and House of Correction, Abingdon }	15	2	13	—
Bucks County Prison	131	3	117	6
Borough Gaol, Buckingham	—	—	—	—
Cambridge County Prison	41	1	49	—
Borough Gaol, Cambridge	27	1	41	1
House of Correction, Ely	17	—	21	2
„ Wisbeach	21	2	30	1
Chester County Gaol	112	38	170	65
House of Correction, Knutsford	257	61	320	63
City Gaol and House of Correction, Chester }	39	5	85	32
Cornwall County Gaol, Bodmin	103	4	130	5
Borough Gaol, Falmouth	7	—	14	—
House of Correction, Penzance	—	—	5	—
Borough Gaol, Helston	—	—	1	—
Cumberland County Gaol, Carlisle ..	76	8	167	45
Derby County and Borough Gaol	308	22	271	18
Devon County Prison, Exeter	246	33	202	9
Borough Prison, Plymouth	66	10	45	3
„ Gaol, Barnstaple	7	—	8	—
„ „ and House of Correction, Tiverton }	3	—	3	—
Borough Prison, Devonport	48	4	53	6
„ Gaol, Bradninch	—	—	—	—
„ „ Southmolton	1	—	3	—
Dorset County Gaol, Dorchester	158	21	91	2
Borough Gaol, Poole	2	—	4	1
Durham County Gaol	369	63	416	110
Essex County Gaol, Springfield	296	17	269	18
House of Correction, Little Ilford	20	2	23	1
Borough Gaol, Colchester	4	—	6	—
„ Maldon	—	—	—	—
Gloucester County Prison and House of Correction }	223	13	256	14
City Bridewell, Bristol	41	10	58	13
Hereford County Gaol and House of Correction }	71	—	57	2
City Gaol, Hereford	20	1	23	—
Hertford County Gaol	121	2	119	4
Gaol and House of Correction, St. Alban's }	41	—	60	3
Huntingdon County Gaol	49	6	46	—

County and Borough Gaols and Houses of Correction.	1st January, 1862.		1st January, 1864.	
	Total.	Roman Catholic.	Total.	Roman Catholic.
ENGLAND—Contd.				
Kent County Prisons, Maidstone	568	45	484	44
County Gaol and House of Cor- rection, Canterbury.....	151	12	100	10
City Prison, Canterbury.....	16	11	13	2
Town Gaol, Dover	46	8	35	6
Borough Prison, Sandwich.....	9	1	19	2
Gaol, Romney Marsh	2	—	—	—
Borough Gaol, Faversham.....	2	—	1	—
„ Tenderden	—	—	—	—
Lancaster County Gaol	93	30	97	39
Borough Gaol, Kirkdale.....	453	141	454	150
House of Correction, Preston.....	303	77	333	80
New Bailey Prison, Salford	462	147	541	158
Borough Gaol, Liverpool	888	485	997	487
City Gaol, Manchester	535	207	583	260
Leicester County Prison.....	199	18	196	16
Borough Gaol and House of Correction, Leicester	55	4	61	2
Lincoln County Gaol	18	—	19	—
House of Correction, Louth	54	—	51	4
„ Spilsby.....	61	5	60	3
„ Kirton	56	3	70	11
„ Falkingham	53	2	39	2
„ Spalding	68	3	61	2
Lincoln City Gaol	15	—	26	4
House of Correction, Grantham	8	—	2	—
Borough Prison, Stamford	7	—	11	1
Middlesex, Gaol of Newgate	101	6	126	24
House of Correction, Coldbath Fields*	1,816	391	1,816	391
House of Detention, Clerkenwell*	293	79	293	79
„ Correction, Westminster	526	183	673	235
City of London Prison, Holloway	376	67	401	90
Monmouth County Gaol.....	25	2	26	4
Borough Gaol, Usk	95	10	121	27
Norfolk County Gaol, Norwich Castle	130	2	116	4
House of Correction, Swaffham	63	2	62	1
City Gaol, Norwich.....	72	—	70	2
Borough Gaol, Great Yarmouth	28	2	46	1
„ Prison, King's Lynn	8	—	2	—
Northampton County Gaol.....	127	7	115	4
Gaol and House of Correction, Peterborough	30	4	15	2
Borough Gaol and House of Correction, Northampton	63	1	109	4
Northumberland County Gaol and House of Correction, Morpeth	85	14	122	31
House of Correction, Tynemouth	11	1	18	4
Borough Gaol, Hexham	2	—	2	1
House of Correction, Alnwick.....	1	—	1	—

* No separate returns were given for those two prisons for this year, and therefore the same numbers are here inserted as in the return for 1862.

County and Borough Gaols and Houses of Correction.	1st January, 1862.		1st January, 1864.	
	Total.	Roman Catholic.	Total.	Roman Catholic.
ENGLAND—Contd.				
Borough Prison, Newcastle- upon-Tyne	172	63	145	61
Gaol, Berwick-upon-Tweed.....	4	—	20	6
Nottingham County Gaol	47	1	32	4
House of Correction, Southwell	138	8	141	3
Borough Gaol and House of } Correction, Nottingham	118	14	93	14
Oxford County Prison	96	2	115	11
City Prison, Oxford	18	2	41	5
Rutland County Gaol, Oakham	6	—	6	1
Salop County Gaol	153	11	164	12
Somerset County Gaol.....	142	2	129	6
House of Correction, Shepton } Mallet	105	3	87	3
City Gaol, Bath	2,672	406	78	7
Southampton County Prison, Win- chester	374	54	345	40
Borough Gaol, Portsmouth.....	101	15	76	12
„ Southampton	82	14	100	15
Stafford County Prison	663	94	664	73
Borough Gaol, Lichfield.....	—	—	—	No return
Suffolk County and Borough Prison, } Bury St. Edmunds	89	1	111	—
County Gaol, Ipswich.....	80	—	102	3
Borough Gaol, Ipswich	15	1	18	—
Surrey County Gaol, Horsemonger- lane	117	17	137	27
House of Correction, Wandsworth	700	124	766	122
Sussex County Prisons, Lewes	219	15	215	22
Borough Gaol, Petworth.....	72	6	97	12
„ Winchelsea.....	—	—	—	—
„ Rye	—	—	4	—
Warwick County Prison.....	178	27	210	22
Borough Prison, Birmingham.....	383	67	397	73
Westmoreland County Prison, Appleby	4	1	14	1
House of Correction, Kendal	27	3	25	3
Wilts County Gaol, Salisbury	58	2	70	3
House of Correction, Devizes.....	81	3	104	8
Worcester County Gaol	284	12	224	14
City Gaol, Worcester	No return	—	95	8
York County Gaol	130	11	52	10
Borough Prison, Northallerton	124	38	136	41
House of Correction, Beverley	78	9	76	14
Borough Prison, Wakefield	800	139	1,107	247
„ Gaol, Kingston-upon-Hull	151	32	184	39
„ „ Leeds	275	56	286	75
House of Correction, Ripon	4	2	12	2
Borough Gaol, Richmond	—	—	3	—
House of Correction, York City	35	11	36	13
Borough Gaol, Scarborough	—	—	6	1

County and Borough Gaols and Houses of Correction.	1st January, 1862.		1st January, 1864.	
	Total.	Roman Catholic.	Total.	Roman Catholic.
WALES :				
Anglesea County Gaol, Beaumaris.....	11	4	23	7
Brecon County Gaol	22	2	36	6
Cardigan County Gaol.....	20	—	28	3
House of Detention, Aberystwith	—	—	—	—
Carmarthen County Prison	30	3	32	4
Carnarvon County Gaol	29	1	33	1
Denbigh County Gaol, Ruthin	31	6	57	2
Flint County Gaol	25	1	20	2
Glamorgan County Gaol, Cardiff	138	24	141	35
Borough Gaol, Swansea	94	23	139	40
Merioneth County Gaol, Dolgelly	19	4	25	4
Montgomery County Gaol	32	3	54	11
Pembroke County Gaol and House of } Correction, Haverfordwest	53	9	66	12
Radnor County Gaol, Presteign.....	12	—	12	—
Borough Gaol, New Radnor	—	—	—	—
Total (including Convict } Prisons).....	25,319	4,675	27,307	5,533

Note.— Ratios of Roman Catholics in 1862, 18·4 per cent.; in 1864, 20·3 per cent.

Here the same result is shown, namely, that the Roman Catholic prisoners are most numerous in the counties already referred to. But the table exhibits a very serious and striking result, namely, that while the Roman Catholic population of England and Wales does not amount to $\frac{1}{20}$ th part of the inhabitants, one-fifth of the inmates of the gaols in those countries are set down as of that religion, and the ratio of such inmates appears from the experience of the last two years to be rapidly increasing.

This fact, while it serves to denote the grades and classes of the principal body of the members of that church in England, renders it a most imperative duty upon those who have the general control over the government of this island, as well as those who profess to have the spiritual ruling of this church, to take prompt and urgent steps to remove the demoralisation which is thus shown to exist among its members.

All these tables show the same result. The Roman Catholic churches and chapels are found in the greatest number in the metropolis, and in certain counties where there are large populations massed together. There also are found the greatest number of Roman Catholic paupers, of Roman Catholic poor schools, and of Roman Catholic offenders.

It appears from the Report on the last Census, that the European

foreigners whose number has been already given as 73,434, were thus grouped in the divisions of the country:—

London.....	37,956	West Midland	3,465
South Eastern Division	4,124	North Midland	1,252
South Midland.....	1,275	North Western.....	7,908
Eastern.....	1,247	Yorkshire	4,187
South Western.....	2,887	Northern	6,042
Monmouth and Wales.....		3,091	

And from the General Report on the Census of 1861, p. 40, is extracted the following passage:—

“The distribution of the Irish immigrants over England is shown in the tables. Thus, 245,933 of them are in Lancashire and Cheshire, 124,646 in the Metropolitan Counties (Middlesex, Surrey, and Kent), 50,664 in Yorkshire, and 42,753 in Durham and Northumberland. Wherever employment is active, the Irish flock; and they abound in the large towns: London, Liverpool, Birmingham, Leeds, Bradford, and Sheffield, generally occupying particular streets and quarters.”

The foreigners and the Irish principally abound where the Roman Catholics were found in greatest numbers, and thus corroboration is supplied to the induction above expressed, as to the source of the late increase of the Roman Catholics in England.

As a corollary, it is to be observed, that the number of Roman Catholics in Ireland was—

In 1834	6,436,060
„ '61	5,505,765

The number of members of the Established Church—

In 1834.....	853,160
„ '61.....	691,872

The proportion of Roman Catholics to members of the Established Church—

In 1834, 100 Roman Catholics to 13·25 members of the Established Church.*	
„ '61, 100 „ to 15·35 „ „	

Here is no less a loss than 2 per cent. in the proportion of the religion in Ireland, according to the General Report of the Census Commissioners for that country; and there should be an addition of 581,154 Protestant Dissenters, and 14,695 of other persuasions to the numbers for the last year.

It seems, therefore, that there is only a shifting of the members

* Parliamentary Paper, House of Commons, 1863, No. 289.

of this church from one part of the United Kingdom to the other; and it will be a curious problem hereafter to be solved, as to what will be its result, whether a conversion of the greater body into the faith of the less, or an absorption of the latter into the former, with a remnant, such as has long existed where the religion is preserved as an heirloom of the estate or a memorial of ancestral dignity.

This paper, however, which deals with the present condition of the Roman Catholics in the country, has been compiled in no spirit of hostility to them. The author is, and always has been, a steady supporter of the extreme views of toleration and religious liberty. He would regret that opinions and principles which he believes to be erroneous should prevail, yet, if such were the result of free and spontaneous discussion and inquiry, he would cheerfully acquiesce. But when a statement of a fact so startling as that enunciated in the first part of this paper is made by one of the eminent men of the present day, and is set forth as supported by statistics, it is proper that it should be fully tested, and its accuracy carefully determined by this Society. With that view the author has investigated it, and firmly believes it to be completely refuted by the investigation.

Individual cases of conversion, where the persons are of public note and distinguished station, have undoubtedly occurred recently; such examples have, indeed, never been rare, and are found not altogether without reciprocity. But there is not the smallest ground for any real alarm as to the progress of the Roman Catholic faith among the English people, or that the English nation is about to return to the spiritual control and subjection from which their ancestors released them three centuries ago. The secessions from the Church of England have been matter of remark; but it will be seen that it is the Protestant Dissenters, and not the Roman Catholics, that have made an appreciable assault upon it.

NOTE.—The following information is obtained as to the Roman Catholics in the British army. In the year 1863-64 there were 69 Protestant chaplains in common, and 19 Roman Catholics; in the year 1864-65, there were the same number of Protestants, but only 17 Roman Catholics. The pay was as follows:—for Protestants in the former year, 18,266*l.*, in the latter, 17,626*l.*, and for the Roman Catholics 4,014*l.* and 3,786*l.* respectively. See Parliamentary Paper, House of Commons, No. 240, Sess. 1864.

In 1861, out of an army of 205,829 men, 58,630 were Roman Catholics; in 1862, out of 196,171 men, 56,104 were Roman Catholics; and in 1863, out of 201,776 men, 58,623 were Roman Catholics. The proportion is less than one-third, but more than one-fourth. Of the marines the numbers were as follows:—in 1861, total, 17,296, Roman Catholics, 1,562; in 1862, total, 17,395,

Roman Catholics, 1,493 ; in 1863, total, 15,634, Roman Catholics, 1,547, being about one-eleventh.*

According to the "Report on the Census," iii, 147, where the number of the army is given for 1861 as 219,799, those born in Ireland are set down as 69,075 ; of the marines set down as 18,143, those born in Ireland were 2,056.

* See Parliamentary Paper, House of Commons, No. 382, Sess. 1864.

On the MORTALITY of EURASIANS. By P. M. TAIT, ESQ., F.S.S., F.R.G.S. (late of Calcutta), Director of Indian Business of the Albert Life Assurance Company.

[Read before the Statistical Society, 17th May. 1864.]

THE principal facts brought under notice in the present paper were embodied in an article in No. LXI of the "Calcutta Review." As that publication is not generally read in this country, I have been induced, at the suggestion of several members of the Society, to introduce the subject upon this occasion, in the belief that any contribution to Indian vital statistics, however humble, will not prove altogether uninteresting to the members of this Society.

In a paper read before the Institute of Actuaries, in December, 1862, and published in the April 1863 number of the "Assurance Magazine," Mr. Samuel Brown, partly quoting from an article in the "Calcutta Review" for March, 1853, notices, in a very able and comprehensive *résumé*, all the papers on European mortality in India which had appeared up to that time, including, of course, the reports by Mr. Davies, Mr. Neison, and others, on the Civil and Military Funds. The mortality amongst the members of the civil and military services of India, has now indeed been determined with the greatest precision; but up to the period embraced in the data now submitted, no attempt, so far as I am aware, has been made to ascertain the mortality which occurs amongst the mixed races resident in India.

It is true that Mr. Davies, in 1842, formed a table for the purposes of the Uncovenanted Service Fund, from Dodwell and Miles' "List of Bengal Civil Servants;" but the lists afforded no means of separating Europeans from Eurasians, nor can the mortality amongst Bengal covenanted servants be considered as likely to represent that which may be expected to obtain among the mixed class, from which the ranks of the uncovenanted service are recruited.

In 1857, while holding the post of Secretary of a life insurance company in Calcutta, I was—while pursuing a separate inquiry—induced to examine incidentally the records of the Uncovenanted Service Family Pension Fund of Bengal, with the view of ascertaining the mortality amongst the members of that fund, more especially the Eurasian members.

And here it will be necessary, for the benefit of my non-Indian

hearers, to endeavour to arrive at clear ideas of the exact signification of the word "Eurasian."

Turning over the pages of the "Calcutta Directory" for 1863, there appears to be at the first glance, amongst the names of the Christian inhabitants, a very plentiful admixture of names indicating Portuguese origin. Thus we find under the letter D—

De Rago,
De Rozario,
De Santo,
De Silva,
De Souza, &c.

In the "Bombay Directory" for 1864, the De Souzas are in extraordinary force, almost rivalling in numbers, proportionally, the Smiths and Robinsons of our own directories. Thus we have also,

De Cruz,
De Gama,
De Mello,
De Mendoza,
De Miranda, &c.;

and so with the "Madras Directory," but not to so great an extent.* As an illustration of the elements which compose Christian society in India, I find that during $10\frac{1}{2}$ months, ending June, 1852, of 282 persons who presented themselves for insurance in Calcutta, there were born in—

England and Wales	88
Scotland	22
Ireland.....	16
India	126
Other places	21
Not known	9
Total	<hr/> 282 <hr/>

Thus nearly one-half of the applicants were born in India, and of that proportion, no doubt a very considerable number, possibly about one-third or one-half, were Eurasians. I mention these particulars only in illustration of the fact, that in Christian society in India there is a very considerable admixture of East Indians, but the exact proportion there are no means of ascertaining. Thus at Madras there is an "East Indian Association," the business of which

* It has been observed, that in India among the English, the number of Portuguese terms in daily use is remarkable. Thus the grounds attached to a house are its "compound," *campinho*; a wardrobe is called an "almirah," *almarrinho*; a tradesman is shown a "muster," *mostra*, a pattern. The word "caste," is supposed to be from the Spanish and Portuguese "*casta*," meaning race or lineage.

is stated to be "to watch over the interests of the East Indian community, and to adopt such measures as may be most conducive to their interests." At Bombay there is an "Indo-British Institution," purely for charitable purposes. At Calcutta, and indeed generally over India, these mixed races are by Europeans conversationally termed, East Indians, Eurasians, Indo-Britons, Indo-Portuguese, Country-born, Half-castes, &c.

There can be little doubt that a considerable proportion of the Eurasian population of India are the descendants, by native women, of the Portuguese who settled on the west coast of India about the beginning of the sixteenth century. There are at the present time very few pure Portuguese in India. Possibly at Goa, once the splendid and populous capital of the Portuguese dominions in the east, there may be still amongst the highest classes a few pure Portuguese families, but the great majority are Indo-Portuguese.*

It will be in the recollection of my hearers, that fully a century before the English appeared in India, the Portuguese had established military settlements at Goa, Bombay, and other places on the Malabar coast. The famous Vasco de Gama, an enterprising Portuguese admiral, discovered the south-east passage to India in 1497. A few years later, in 1508, the celebrated Albuquerque besieged and finally captured Goa from the Mohammedans, fortified it, and made it the capital of the Portuguese dominions in the east.† The flag of Portugal, now seldom seen in those waters, was once entirely dominant. That nation enjoyed without a rival the monopoly of the power for fully a century, maintaining an exclusive claim to the passage round the Cape, and exploring the Indian seas as far as Japan.‡ It is stated that "they had a considerable army in India, but never possessed any large territory, and may be said to have pillaged the country rather than conquered it." In 1518 Portuguese power had attained a climax in India, since which it has declined, and has long ago become extinct, the small settlement at Goa being the only remnant remaining.

In 1594 the Dutch dispatched four ships to India, and a sanguinary war between the Portuguese and that nation soon followed.§ The Dutch at Chinsurah and other factories, appear to have largely cultivated social intercourse with Malay families settled at their establishments, the result being a description of women called "Mosses," who were, about the beginning of the present century, in high estimation for their beauty and talents.||

* "Hamilton's Gazetteer of India," art. Goa.

† "Thornton's Gazetteer of India," art. India.

‡ "Mills's History of British India."

§ "Thornton's Gazetteer of India," art. India.

|| "Calcutta Review," September, 1860.

During the progress of the first Burmese war, the King of the Netherlands ceded to England all the Dutch possessions on the Indian continent.

The first appearance of the French in India was about the end of the sixteenth century, a company which had been formed in Brittany having sent out two ships. After repeatedly failing to establish factories, they at a later period succeeded in carrying by assault a small seaport contiguous to Madras, called St. Thomé, which they held only two years, but from the wreck of which they founded their famous settlement of Pondicherry, where a small district was ceded to them by one of the native princes. Pondicherry remains to this day the capital of the French possessions in India and seat of their supreme Government. In illustration of the extent of French dominion in India at the present time, I may mention that the Governor at Pondicherry is said to be paid at the rate of 100 rupees or 10*l.* a-month. Chandernagore, near Calcutta, is also a French settlement, but I believe that a few policemen there are quite equal to all the exigencies of the Government.

On the last day of the year 1600, "The Governor and Company of Merchants trading to the East Indies" were constituted, under charter from Queen Elizabeth, a body politic and corporate, with power to trade to all places beyond the Cape of Good Hope and Straits of Magellan, for fifteen years. At first the early voyages of the company were confined to the islands of the Indian Ocean; but on the renewal of the charter by James I, they proceeded to establish a commercial intercourse with the Asiatic continent, and in 1612 permission was given by Jehangir to establish an English factory at Surat.*

Thus was laid the foundation of that mighty British-Indian empire, of which it is impossible to speak without a certain amount of wonder and enthusiasm, and which,—originating in the possession of a few acres of land held under ignoble conditions by the servants of a trading company, the representatives of a nation, until the appearance of Clive, deemed by the haughty viziers of the Great Mogul to consist of mere pedlars and traders, incapable of any great enterprise,—now extends from Cape Comorin to the snows of the Himalayas, comprising twenty-one different nations, speaking as many different languages, and numbering no less than 185 millions of human beings, subject to British rule and influence.

In addition to the European nations mentioned above, India has also been colonized by the following among other peoples, given in the order of their supposed arrival:—Jews, Syrian Christians, Arabs, Armenians, Persians, Affghans, Tartars, Turks, Abyssinians, Danes,

* "Thornton's Gazetteer of India," art. India.

Chinese, and Americans.* There is a small settlement of Danes at Serampore, in the immediate neighbourhood of Calcutta.

In the absence of any reliable statistics on the subject, I believe I am correct in stating that the great majority of Eurasians in India are Indo-European, and of these perhaps there is about an equal number of Indo-Portuguese and Indo-British.

The word "Eurasian," then, is used strictly in a conventional and not an ethnological sense, and has reference, generally, to Christians of colour in India of mixed European and Asiatic parentage, or the descendants of such.

It is a mistake which I notice has been fallen into on several occasions, to imagine that East Indians are one homogeneous race or nation possessed of certain distinguishing and immutable qualities, and wanting in certain other qualities. The class, in respect to inherent qualities, is essentially heterogeneous. Thus, the descendants of the followers of Albuquerque and their Malay mistresses, and the offspring of an Anglo-Bengal civilian and a Hindoo woman, would alike be termed East Indians. A person with one-half Celtic and one-half Hindoo blood in his veins, or with nine-tenths Hindoo and one-tenth Portuguese, or the converse, would in India be called an East Indian. There is no attempt to discriminate the degrees of difference, but the term, in point of fact, is applied generally to all Christians of colour who affect the dress and manners of Europeans.

Until within the last few years great prejudices existed both amongst Europeans and natives in India against East Indians. There is a very interesting article in a recent number of the "Calcutta Review," entitled "Calcutta in the Olden Time," from which we learn the estimation in which they were held fifty years ago. By the natives they were opprobriously styled *chichi*, *mutia Feringee*, i.e., *mud* Englishman, &c., and the author of "Sketches of India in 1811," declared them to be "characterised by all the vices and gross prejudices of the natives, and by all the faults and failings of the European character, without its candour, sincerity, or probity; a heterogeneous set, some by Hindoo, others by Mohammedan and Malay mothers, as wills the caprice of the fathers."

It is amusing to find that the governing class in India, in those days, entertained serious apprehensions that the East Indians would mutiny and join the natives. They were not allowed to hold office under the East India Company, and their admission to all offices of authority was opposed on the ground that "their admission could not fail to lessen that respect and deference which ought most studiously to be exacted on every occasion from the natives."

* "McCulloch's Geographical Dictionary," art. Hindostan.

There can be no doubt that great discredit was in those days often thrown on East Indians by the system of proselytism then existing amongst the Portuguese priests. "For the dregs of the Mussulmans and Hindoos, employed in the meanest and vilest offices," says one writer, "for the most abandoned criminals and all those indeed who are utter outcasts from their own race and religion, there is one resource, and that is, to turn Christian. The Portuguese priests receive all, baptise and give them absolution, and as soon as they are made Christians, they call themselves and are called Portuguese, affecting the dress and manners of Europeans."

Of recent years the prejudices against Eurasians have to a great extent passed away; and many experienced Indian authorities speak highly of them. Their loyalty has latterly never been questioned, and the subordinate offices of the local Government of India are recruited mainly from their ranks. Very satisfactory evidence was given in their favour before the "Select Colonization and Settlement (India) Committee," in 1859. Thus Mr. Saunders, Mr. Forbes, Colonel Turner, Dr. Ralph Moore, and others, speak favourably as to their intelligence and probity. Dr. Moore, a resident in India for forty years, while admitting that they are not equal to pure Europeans in physical stamina, more especially those of them employed in sedentary pursuits, declares that he has found them sober and industrious, that they make capital soldiers, instancing the names of Skinner and Van Cortland, and have even produced several excellent judges. Colonel Everest, a name well known in the scientific world, is stated to have had many Eurasians in his employment, and to have spoken of them in the highest terms.

Personally, during an eleven years' residence in India, I have not come much in contact with East Indians, and, besides, the class is altogether so heterogeneous that it is impossible, with any justice or accuracy, to characterise it in a general way. I have had several of them in my office, who made excellent accountants and computers, but certainly not superior in that respect to the Hindoos. The dregs in the presidency towns of India are a peculiarly low and degraded class. On the other hand, those holding the higher posts in governmental and merchants' offices in Calcutta and elsewhere, are much esteemed for their business qualities. The great misfortune of the vast majority of East Indians is, that they have never had the advantages of a decent education, such as is available in this country. With proper training and education, I see no reason why they should not, for all practical business purposes, be quite equal to Europeans.

It is pleasant, from this region of doubt, uncertainty, and vague

generalisation, to turn to the purely statistical portion of our subject.

The records of the Uncovenanted Service Family Pension Fund, which were kindly placed at my disposal by Mr. Kellner, furnish the following particulars with reference to 945 persons who became subscribers to the fund during the twenty years ending 30th April, 1857, viz., the date of entry, together with the age at entry, and the age at death, resignation, or dismissal; the age at entry verified by baptismal or other certificate; and the age at death or discontinuance being in all cases computed to the nearest birthday. Europeans and East Indians were distinguished in the list, and the following table exhibits the proportion of each class subscribing to the fund:—

ABSTRACT A.—*Classification of Subscribers.*

Class.	Number.	Percentage of Whole Number.
East Indians	693	73·333
Europeans	244	25·820
Unknown	8	·847
Total	945	100·000

It should be understood that these are 945 *lives*, not entries—a necessary distinction; for there are members of the fund who have been struck off, and subsequently readmitted more than once. In such cases only the first entry and discontinuance are noted, in order that the list may have reference to lives only.

The following table, then, exhibits the principal elementary facts from which to determine the rate of mortality amongst the members of the Uncovenanted Fund. In the explanation of the table, we have adopted very nearly, the phraseology employed by Mr. Neison on similar occasions:—

- a. Represents the age.
- b. The number of subscribers entering at each age.
- c. The number of subscribers remaining under observation from each preceding age. Thus, two entered at age 19, and not coming under any of the contingencies contemplated in the succeeding columns, are re-entered as under observation at age 20, when other two subscribers entered, there being then four under observation in all, out of whom one with-

drew, and the remaining three are entered in this column opposite age 21.

- d.* The total number of subscribers under observation at each age. Thus, there were three subscribers remaining under observation from the preceding age at age 21, which, added to the nine entering at that age, makes twelve in all, of whom two are alive at 30th April, 1857, and therefore no longer under notice, leaving ten to be carried forward to column *c*, opposite age 22.
- e.* The number dying at each age.
- f.* Those who withdraw from the fund.
- g.* Those who are struck off.
- h.* The total of *f* and *g*.
- m.* The number of subscribers alive at 30th April, 1857, and who have not withdrawn or been struck off.
- n.* The total of columns *e*, *h*, and *m*, or the number who pass from observation at any age.
- o.* One-half the numbers in column *b*.
- p.* One-half of the numbers in column *h*.
- q.* Total of *o* and *p*.
- r.* The number exposed to one entire year's risk of mortality ; and is obtained for each age by deducting the number in column *q* from the number in column *d* opposite the age. As subscribers enter at various periods throughout the year, the persons represented by the numbers in column *b* are, one with another, not subject to more than six months' risk, or, which is the same thing, one-half of them to a year's risk. And as subscribers discontinue at various periods throughout the year, they are, one with another, subject to only six months' risk in that year, or one-half of them to a whole year's risk. Hence one-half of the number entered, and one-half of the number discontinued, have to be deducted from the gross number under observation, as exhibited in column *d*; the residue in column *r* being the number exposed to a complete year's risk.

ABSTRACT B.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>
From 1st May, 1837,							
Ages.	Number Entered at Each Age.	Number Remaining under Observation from Preceding Age.	Total Number under Observation at Each Age.	Died.	Discontinued.		
					Withdrawn.	Struck Off.	Total.
19.....	2	—	2	—	—	—	—
20.....	2	2	4	—	1	—	1
21.....	9	3	12	—	—	—	—
22.....	22	10	32	—	1	1	2
23.....	15	27	42	—	1	2	3
24.....	29	37	66	—	—	4	4
25.....	36	60	96	—	2	2	4
26.....	47	87	134	—	—	3	3
27.....	36	117	153	2	6	3	9
28.....	47	123	170	1	6	2	8
29.....	48	150	198	6	2	4	6
30.....	48	174	222	3	2	6	8
31.....	48	192	240	1	1	5	6
32.....	55	221	276	2	3	4	7
33.....	48	242	290	2	4	3	7
34.....	49	261	310	5	8	5	13
35.....	34	265	299	7	7	5	12
36.....	37	265	302	4	1	4	5
37.....	31	264	295	4	1	10	11
38.....	39	255	294	4	5	5	10
39.....	26	248	274	7	4	2	6
40.....	30	235	265	6	3	3	6
41.....	18	227	245	6	3	6	9
42.....	20	209	229	12	4	4	8
43.....	19	185	204	3	2	5	7
44.....	21	178	199	6	3	1	4
45.....	19	167	186	8	2	2	4
46.....	15	156	171	5	1	2	3
47.....	15	140	155	4	2	3	5
48.....	7	132	139	3	3	1	4
49.....	10	123	133	6	1	2	3
50.....	11	111	122	1	—	1	1
51.....	8	99	107	8	—	1	1
52.....	8	92	100	6	6	1	7
53.....	4	78	82	3	2	—	2
54.....	7	74	81	5	—	—	—
55.....	7	68	75	2	—	4	4
56.....	2	60	62	1	2	—	2
57.....	5	52	57	3	—	—	—
58.....	4	47	51	1	2	—	2
59.....	1	39	40	1	—	—	—
60.....	1	36	37	1	—	—	—

ABSTRACT B.

<i>m</i>	<i>n</i>	<i>o</i>	<i>p</i>	<i>q</i>	<i>r</i>	<i>a</i>
to 30th April, 1857.						
Alive at 30th April, 1857.	Total Gone Off.	Half of Discontinued and Half of Entered.			Number Exposed to Risk.	Ages.
		Entered.	Discontinued.	Total.		
—	—	1	—	1	1	19
—	1	1	·5	1·5	2·5	20
2	2	4·5	—	4·5	7·5	21
3	5	11	1	12	20	22
2	5	7·5	1·5	9	33	23
2	6	14·5	2	16·5	49·5	24
5	9	18	2	20	76	25
14	17	23·5	1·5	25	109	26
19	30	18	4·5	22·5	130·5	27
11	20	23·5	4	27·5	142·5	28
12	24	24	3	27	171	29
19	30	24	4	28	194	30
12	19	24	3	27	213	31
25	34	27·5	3·5	31	245	32
20	29	24	3·5	27·5	262·5	33
27	45	24·5	6·5	31	279	34
15	34	17	6	23	276	35
29	38	18·5	2·5	21	281	36
25	40	15·5	5·5	21	274	37
32	46	19·5	5	24·5	269·5	38
26	39	13	3	16	258	39
26	38	15	3	18	247	40
21	36	9	4·5	13·5	231·5	41
24	44	10	4	14	215	42
16	26	9·5	3·5	13	191	43
22	32	10·5	2	12·5	186·5	44
18	30	9·5	2	11·5	174·5	45
23	31	7·5	1·5	9	162	46
14	23	7·5	2·5	10	145	47
9	16	3·5	2	5·5	133·5	48
13	22	5	1·5	6·5	126·5	49
21	23	5·5	·5	6	116	50
6	15	4	·5	4·5	102·5	51
9	22	4	3·5	7·5	92·5	52
3	8	2	1	3	79	53
8	13	3·5	—	3·5	77·5	54
9	15	3·5	2	5·5	69·5	55
7	10	1	1	2	60	56
7	10	2·5	—	2·5	54·5	57
9	12	2	1	3	48	58
3	4	·5	—	·5	39·5	59
5	6	·5	—	·5	36·5	60

ABSTRACT B—Contd.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>
Ages.	Number Entered at Each Age.	Number Remaining under Observation from Preceding Age.	Total Number under Observation at Each Age.	Died.	From 1st May, 1837,		
					Discontinued.		
					Withdrawn.	Struck Off.	Total.
61.....	1	31	32	5	—	—	—
62.....	—	25	25	1	1	—	1
63.....	—	22	22	3	—	—	—
64.....	2	19	21	3	—	—	—
65.....	1	17	18	3	—	—	—
66.....	1	13	14	—	—	—	—
67.....	—	12	12	2	—	—	—
68.....	—	10	10	—	—	—	—
69.....	—	10	10	—	2	—	2
70.....	—	8	8	3	—	—	—
71.....	—	4	4	2	—	—	—
72.....	—	2	2	1	—	—	—
73.....	—	1	1	—	—	—	—
74.....	—	1	1	—	—	—	—
75.....	—	1	1	—	—	—	—
76.....	—	1	1	—	—	—	—
77.....	—	1	1	—	—	—	—
78.....	—	1	1	—	—	—	—
79.....	—	1	1	1	—	—	—
	945	5,691	6,636	163	94	106	200

The following is an abstract of the particulars in the preceding table:—

ABSTRACT C.

Ages.	Number Exposed to the Risk of Mortality.	Died.	Mortality per Cent.
21-25	186·0	—	—
26-30	747·0	12	1·6064
31-35	1275·5	17	1·3328
36-40	1329·5	25	1·8804
41-45	998·5	35	3·5053
46-50	683·0	19	2·7818
51-55	421·0	24	5·7007
56-60	238·5	7	2·9350
61-65	115·5	15	12·9872
66-70	52·5	5	9·5238
71-75	9·0	3	33·3333
76-79	4·0	1	25·0000
Total	6060·0	163	2·6898

ABSTRACT B—Contd.

m n o p q r a

to 30th April, 1857.

Alive at 30th April, 1857.	Total Gone Off.	Half of Discontinued and Half of Entered.			Number Exposed to Risk.	Ages.
		Entered.	Discontinued.	Total.		
2	7	.5	—	.5	31.5	61
1	3	—	.5	.5	24.5	62
—	3	—	—	—	22	63
1	4	1	—	1	20	64
2	5	.5	—	.5	17.5	65
2	2	.5	—	.5	13.5	66
—	2	—	—	—	12	67
—	—	—	—	—	10	68
—	2	—	1	1	9	69
1	4	—	—	—	8	70
—	2	—	—	—	4	71
—	1	—	—	—	2	72
—	—	—	—	—	1	73
—	—	—	—	—	1	74
—	—	—	—	—	1	75
—	—	—	—	—	1	76
—	—	—	—	—	1	77
—	—	—	—	—	1	78
—	1	—	—	—	1	79
582	945	472.5	100.0	572.5	6,063.5	

It thus appears that during 6,060 years of risk to which the members have been exposed, 163 died, the mortality being 2.6898 per cent.

The following table exhibits the particulars necessary to determine the mortality amongst East Indian subscribers to the fund, the explanation of the different columns being the same as that applicable to Abstract B.

ABSTRACT D.

Ages.	Number Entered at Each Age.	Number Remaining under Observation from Preceding Age.	Total Number under Observation at Each Age.	Died.	From 1st May, 1837,		
					Discontinued.		
					Withdrawn.	Struck Off.	Total.
19.....	2	—	2	—	—	—	—
20.....	2	2	4	—	1	—	1
21.....	9	3	12	—	—	—	—
22.....	19	10	29	—	1	1	2
23.....	14	25	39	—	1	2	3
24.....	28	35	63	—	—	4	4
25.....	29	57	86	—	1	2	3
26.....	40	79	119	—	—	2	2
27.....	25	104	129	1	5	3	8
28.....	36	104	140	—	4	2	6
29.....	37	123	160	5	2	4	6
30.....	38	139	177	1	—	4	4
31.....	37	155	192	1	—	3	3
32.....	49	177	226	2	2	4	6
33.....	35	197	232	—	3	3	6
34.....	33	210	243	4	5	5	10
35.....	21	210	231	6	7	3	10
36.....	25	202	227	3	1	2	3
37.....	22	202	224	3	—	6	6
38.....	27	198	225	3	4	4	8
39.....	19	194	213	5	1	1	2
40.....	18	184	202	5	2	3	5
41.....	15	173	188	5	3	5	8
42.....	14	159	173	10	3	1	4
43.....	12	140	152	1	2	3	5
44.....	9	136	145	5	2	1	3
45.....	13	121	134	7	1	2	3
46.....	5	112	117	4	1	2	3
47.....	11	90	101	2	1	2	3
48.....	4	87	91	2	2	1	3
49.....	7	77	84	2	1	2	3
50.....	7	72	79	1	—	1	1
51.....	6	64	70	3	—	—	—
52.....	4	64	68	6	4	—	4
53.....	3	53	56	2	1	—	1
54.....	4	51	55	3	—	—	—
55.....	2	46	48	2	—	3	3
56.....	1	36	37	1	1	—	1
57.....	5	29	34	2	—	—	—
58.....	4	30	34	1	2	—	2
59.....	—	26	26	—	—	—	—
60.....	—	23	23	—	—	—	—

1864.]

TAIT on the Mortality of Eurasians.

337

ABSTRACT D.

m

n

o

p

q

r

a

to 30th April, 1837.

Alive at 30th April, 1857.	Total Gone Off.	Half of Discontinued and Half of Entered.			Number Exposed to Risk.	Ages.
		Entered.	Discontinued.	Total.		
—	—	1	—	1	1	19
—	1	1	.5	1.5	2.5	20
2	2	4.5	—	4.5	7.5	21
2	4	9.5	1	10.5	18.5	22
1	4	7	1.5	8.5	30.5	23
2	6	14	2	16	47	24
4	7	14.5	1.5	16	70	25
13	15	20	1	21	98	26
16	25	12.5	4	16.5	112.5	27
11	17	18	3	21	119	28
10	21	18.5	3	21.5	138.5	29
17	22	19	2	21	156	30
11	15	18.5	1.5	20	172	31
21	29	24.5	3	27.5	198.5	32
16	22	17.5	3	20.5	211.5	33
19	33	16.5	5	21.5	221.5	34
13	29	10.5	5	15.5	215.5	35
19	25	12.5	1.5	14	213	36
17	26	11	3	14	210	37
20	31	13.5	4	17.5	207.5	38
22	29	9.5	1	10.5	202.5	39
19	29	9	2.5	11.5	190.5	40
16	29	7.5	4	11.5	176.5	41
19	33	7	2	9	164	42
10	16	6	2.5	8.5	143.5	43
16	24	4.5	1.5	6	139	44
12	22	6.5	1.5	8	126	45
20	27	2.5	1.5	4	113	46
9	14	5.5	1.5	7	94	47
9	14	2	1.5	3.5	87.5	48
7	12	3.5	1.5	5	79	49
13	15	3.5	.5	4	75	50
3	6	3	—	3	67	51
5	15	2	2	4	64	52
2	5	1.5	.5	2	54	53
6	9	2	—	2	53	54
7	12	1	1.5	2.5	45.5	55
6	8	.5	.5	1	36	56
2	4	2.5	—	2.5	31.5	57
5	8	2	1	3	31	58
3	3	—	—	—	26	59
3	3	—	—	—	23	60

ABSTRACT D.

<i>a</i> Ages.	<i>b</i> Number Entered at Each Age.	<i>c</i> Number Remaining under Observation from Preceding Age.	<i>d</i> Total Number under Observation at Each Age.	<i>e</i> Died.	<i>f</i> From 1st May, 1837, <i>g</i> Discontinued. <i>h</i>		
					Withdrawn.	Struck Off.	Total.
61.....	1	20	21	4	—	—	—
62.....	—	16	16	—	—	—	—
63.....	—	15	15	2	—	—	—
64.....	1	13	14	2	—	—	—
65.....	—	11	11	1	—	—	—
66.....	—	9	9	—	—	—	—
67.....	—	8	8	2	—	—	—
68.....	—	6	6	—	—	—	—
69.....	—	6	6	—	1	—	1
70.....	—	5	5	2	—	—	—
71.....	—	2	2	1	—	—	—
72.....	—	1	1	1	—	—	—
73.....	—	—	—	—	—	—	—
74.....	—	—	—	—	—	—	—
75.....	—	—	—	—	—	—	—
76.....	—	—	—	—	—	—	—
77.....	—	—	—	—	—	—	—
78.....	—	—	—	—	—	—	—
79.....	—	—	—	—	—	—	—
	693	4,311	5,004	113	65	81	146

The following table is an abstract of the results of the preceding one :—

ABSTRACT E.

Ages.	Number Exposed to the Risk of Mortality.	Died.	Mortality per Cent.
21-25	173'5	—	—
26-30	624'0	7	1'1218
31-35	1019'0	13	1'2758
36-40	1023'5	19	1'8564
41-45	749'0	28	3'7383
46-50	448'5	11	2'4526
51-55	283'5	16	5'6437
56-60	147'5	4	2'7119
61-65	76'0	9	11'8421
66-70	33'5	4	11'9403
71-72	3'0	2	66'6667
Total	4581'0	113	2'4667

ABSTRACT D—Contd.

to 30th April, 1857.						
Alive at 30th April, 1857.	Total Gone Off.	Half of Discontinued and Half of Entered.			Number Exposed to Risk.	Ages.
		Entered.	Discontinued.	Total.		
1	5	·5	—	·5	20·5	61
1	1	—	—	—	16	62
—	2	—	—	—	15	63
1	3	·5	—	·5	13·5	64
1	2	—	—	—	11	65
1	1	—	—	—	9	66
—	2	—	—	—	8	67
—	—	—	—	—	6	68
—	1	—	·5	·5	5·5	69
1	3	—	—	—	5	70
—	1	—	—	—	2	71
—	1	—	—	—	1	72
—	—	—	—	—	—	73
—	—	—	—	—	—	74
—	—	—	—	—	—	75
—	—	—	—	—	—	76
—	—	—	—	—	—	77
—	—	—	—	—	—	78
—	—	—	—	—	—	79
434	693	346·5	73·	419·5	4584·5	

It would appear, therefore, that during 4,581 years of risk to which the Eurasians subscribers were exposed, 113 died; the mortality being 2·4667 per cent.

These results are somewhat remarkable. Hitherto an apparently universal impression has prevailed that the rate of mortality amongst Eurasians is considerably in excess of that which obtains amongst Europeans resident in India, and some insurance offices decline insuring them at the rates of premium applicable to Europeans; but the facts set forth in the preceding tables, tend to prove that the respectable and provident portion of the Eurasian community are, at certain ages, subject to a less rate of mortality than that which prevails amongst any other class of Christians in India. At ages 21–25 there are only 173 lives under observation, and at ages 51–72, not more than 544, these numbers being too small to warrant any confidence in the results; but confining ourselves to the remaining 3,864 lives, which comprise 84 per cent. of the whole experience, the following is the result as compared with the casualties amongst

the members of the Covenanted Civil Service of Bengal, as given by Mr. Neison at p. 4 of his "Report on the Bengal Civil Fund," and founded on "A Register of the Honourable East India Company's "Civil Servants of the Bengal Establishment from 1790 to 1842, "&c., &c., compiled under the direction of the Hon. H. T. Prinsep, "late Member of Council of India, by Ramchunder Doss."

ABSTRACT F.

Ages.	East Indians, 1837-57.			Civil Service, 1790-1842.		
	Number Exposed to Risk.	Died.	Mortality per Cent.	Number Exposed to Risk.	Died.	Mortality per Cent.
26-30.....	624'0	7	1'1218	4,010	84	2'094
31-35.....	1019'0	13	1'2758	3,177	48	1'511
36-40.....	1023'5	19	1'8564	2,172	60	2'762
41-45.....	749'0	28	3'7383	1,496	44	2'941
46-50.....	448'5	11	2'4526	818	29	3'545
26-50.....	3864'0	78	2'01863	11,673	265	2'2702

Thus at 26-40 inclusive, it would appear that 13'5 East Indians and 17'6 civilians out of every 1,000 die annually; and at 26-50 inclusive, 20 East Indians, and nearly 23 civilians.

The results are still in favour of East Indians, even if the comparison be made to apply to the deaths in the civil service during the more recent period, 1820-42, according to the list compiled by Ramchunder Doss, as will appear from the following table:—

ABSTRACT G.

Ages.	East Indians, 1837-57.			Civil Service, 1820-42.		
	Number Exposed to Risk.	Died.	Mortality per Cent.	Number Exposed to Risk.	Died.	Mortality per Cent.
26-30.....	624'0	7	1'1218	1,528	30	1'963
31-35.....	1019'0	13	1'2758	975	10	1'026
36-40.....	1023'5	19	1'8564	285	4	1'403
26-40.....	2666'5	39	1'4626	2,788	44	1'5782

indicating a rate of mortality amounting to 1'4626 amongst East Indians, and of 1'5782 amongst the members of the Bengal Civil Service.

The Covenanted Civil Service has always hitherto been considered the most select class of lives in India. In the receipt of large

incomes, living in the best houses, with ample means to effect change of climate whenever sickness renders it necessary, commanding everything, in short, which reduces the risk of residence in that country to the minimum, it is not to be wondered at that the mortality amongst certain sections of the population of the British islands—the adult male population of Glasgow, for instance*—is, at ages 21–45, in excess of that prevailing in the Bengal Civil Service; nor, for obvious reasons, should we be unprepared to learn, that the casualties amongst Bengal civilians are considerably less than amongst their humbler brethren of the uncovenanted service. The contrary, however, appears to be the case; and as the mortality of the humble provident classes in England is less than that of the aristocracy,† so is the mortality amongst the provident East Indian members of the Uncovenanted Fund less than that observed to prevail amongst the governing class in India.

There is one consideration which must not be overlooked. It is compulsory on members of the Bengal Civil Service, all of whom, however, are approved by medical examiners in England before appointment, to subscribe to the fund; in the case of the Uncovenanted Fund, it is not compulsory,—the directors strictly exercise the right of selection under the rules of the fund. Thus every applicant must undergo careful medical examination, and be pronounced of sound constitution before admission. But will this explain the low rate of mortality prevailing among East Indians, as revealed by the above tables? We do not think so. Applicants for assurance at healthy rates to life offices, both in India and in England, are subjected to the strictest examination, the result being that—so far as the experience of one office with which we are acquainted goes—about $9\frac{1}{2}$ per cent. in India are rejected; but the mortality amongst assured lives does not appear to be less on that account. If any reliance is to be placed on Mr. Francis' paper, it is in India considerably more, at certain ages, than is represented even by the army casualties. The fact is, that no man will pay his money either to a fund or a life office, unless he has a tolerably clear idea that the arrangement is a better one for himself than putting it out at interest. Those who have a very high opinion of their vitality, will be apt to invest their savings elsewhere; while the chances are, that the number of bad and indifferent lives offering, will counteract all the advantages derivable from selection.

But although the results above given are, so far as the data will admit, at certain ages decisive as affecting the East Indian members of the Uncovenanted Fund, they cannot be received as applicable to the East Indian community generally. There can be no doubt that

* Neison, "Report on Bengal Civil Fund," p. 12.

† Neison, "Vital Statistics," p. 157.

the payment monthly, for provident purposes, of a certain sum by persons in middle or inferior life, is indicative of more than average intelligence—of the existence of those temperate, careful, frugal habits which result in health and longevity. Thus, as the members of friendly societies in England enjoy, one with another, longer life than falls to the lot of the working classes generally, it is not unreasonable to conclude that East Indian subscribers to the fund are a very superior class to the mixed Eurasian population throughout India.

The following table exhibits the mortality among the whole body of subscribers and East Indian subscribers to the fund, placed in juxtaposition :—

ABSTRACT H.

Ages.	Mortality per Cent.	
	Mixed Class.	East Indians.
26-30	1·6064	1·1218
31-35	1·3328	1·2758
36-40	1·8804	1·8564
41-45	3·5053	3·7383
46-50	2·7818	2·4526
51-55	5·7007	5·6437
56-60	2·9350	2·7119

From the preceding tables it appears that while the mortality at ages from 21 to 60 inclusive, amongst the members of the fund generally, is 2·6898 per cent. per annum, the mortality amongst East Indian members is only 2·4667 per cent. per annum.

The following Table I* is formed from the data in Abstract B preceding, and represents the mortality for the mean of each quinquennial term of life among the subscribers to the Uncovenanted Fund. For an explanation of how it and the succeeding tables are constructed, see Mr. Neison's works.†

* Tables I, II, IV, and V, indicating the processes by which the results in the Tables of Decrements, Nos. III and VI were obtained, are for brevity omitted; and not being considered essential to the argument.

† "Vital Statistics," pp. 117—119, 145—147. Paper on Master Mariners, *Journal of the Statistical Society*, vol. xiii, &c. Mr. Samuel Brown, in forming a table of mortality applicable to the Madras Military Fund, takes the logarithm of the mortality per cent. at the mean age for each decennial period, as the basis of the table, and obtains the logarithm for the intermediate ages, by even differences of logarithms set against each tenth age.—"Report on the Madras Military Fund," p. 51.

From the results in Table II, the following Table of Decrements is derived:—

III.—Table of Decrements—Mixed Class.

1	2	3	4	5
Age.	Mortality } = (d). per Cent. } $1 - \frac{d}{100}$	$\lambda \left(1 - \frac{d}{100}\right) = (c)$. $5 + \Sigma (c) = \lambda (l)$	Number Living = (l).	Number Dying.
25	1·606 ·98394	5·00000 9·99297	100,000	1,606
26	1·606 ·98394	4·99297 ·99297	98,394	1,580
27	1·606 ·98394	·98594 ·99297	96,814	1,554
28	1·606 ·98394	·97891 ·99297	95,260	1,530
29	1·486 ·98514	·97188 ·99350	93,730	1,392
30	1·398 ·98602	·96538 ·99389	92,338	1,290
31	1·344 ·98656	·95927 ·99412	91,048	1,225
32	1·322 ·98678	·95339 ·99422	89,823	1,187
33	1·333 ·98667	·94761 ·99417	88,636	1,182
34	1·356 ·98644	·94178 ·99407	87,454	1,186
35	1·423 ·98577	·93585 ·99378	86,268	1,227
36	1·532 ·98468	·92963 ·99330	85,041	1,302
37	1·685 ·98315	·92293 ·99262	83,739	1,410
38	1·880 ·98120	·91555 ·99176	82,329	1,548
39	2·393 ·97607	·90731 ·98948	80,781	1,833
40	2·812 ·97188	·89679 ·98761	78,848	2,218
41	3·137 ·96863	·88440 ·98616	76,630	2,403

III.—*Table of Decrements—Mixed Class—Contd.*

1	2	3	4	5
Age.	Mortality } = (d). per Cent. } $1 - \frac{d}{100}$	$\lambda \left(1 - \frac{d}{100}\right) = (c)$. $5 + \Sigma (c) = \lambda (l)$.	Number Living = (l).	Number Dying.
42	3·368 ·96632	4·87056 9·98512	74,227	2,500
43	3·505 ·96495	·85568 ·98450	71,727	2,515
44	3·069 ·96931	·84018 ·98646	69,212	2,125
45	2·779 ·97221	·82664 ·98776	67,087	1,854
46	2·634 ·97366	·81440 ·98841	65,223	1,718
47	2·635 ·97365	·80281 ·98840	63,505	1,673
48	2·782 ·97218	·79121 ·98775	61,832	1,720
49	3·820 ·96180	·77896 ·98308	60,112	2,297
50	4·632 ·95368	·76204 ·97940	57,815	2,678
51	2·954 ·97046	·74144 ·98698	55,137	1,629
52	3·044 ·96956	·72842 ·98657	53,508	1,629
53	3·140 ·96860	·71499 ·98614	51,879	1,630
54	3·241 ·96759	·70113 ·98569	50,249	1,628
55	3·350 ·96650	·68682 ·98520	48,621	1,629
56	3·466 ·96534	·67202 ·98468	46,992	1,629
57	3·590 ·96410	·65670 ·98412	45,363	1,629
58	3·724 ·96276	·64082 ·98352	43,734	1,628
59	3·868 ·96132	·62434 ·98287	42,106	1,629

III.—*Table of Decrements—Mixed Class—Contd.*

1 Age.	2 Mortality } = (d). per Cent. } $1 - \frac{d}{100}$	3 $\lambda \left(1 - \frac{d}{100}\right) = (c)$. $5 + \Sigma (c) = \lambda (l)$.	4 Number Living = (l).	5 Number Dying.
60	4·024 ·95976	4·60721 9·98216	40,477	1,629
61	4·192 ·95808	·58937 ·98140	38,848	1,629
62	4·322 ·95678	·57077 ·98081	37,219	1,608
63	4·518 ·95482	·55158 ·97992	35,611	1,609
64	4·673 ·95327	·53150 ·97922	34,002	1,589
65	4·902 ·95098	·51072 ·97817	32,413	1,589
66	5·155 ·94845	·48889 ·97701	30,824	1,589
67	5·435 ·94565	·46590 ·97573	29,235	1,589
68	5·747 ·94253	·44163 ·97430	27,646	1,589
69	6·098 ·93902	·41593 ·97267	26,057	1,589
70	6·494 ·93506	·38860 ·97084	24,468	1,589
71	6·944 ·93056	·35944 ·96874	22,879	1,589
72	7·463 ·92537	·32818 ·96632	21,290	1,588
73	8·065 ·91935	·29450 ·96348	19,702	1,589
74	8·772 ·91228	·25798 ·96013	18,113	1,589
75	9·615 ·90385	·21811 ·95610	16,524	1,589
76	10·239 ·89761	·17421 ·95309	14,935	1,529
77	10·815 ·89185	·12730 ·95029	13,406	1,450

III.—Table of Decrements—Mixed Class—Contd.

1	2	3	4	5
Age.	Mortality } = (d). per Cent. } $1 - \frac{d}{100}$	$\lambda \left(1 - \frac{d}{100}\right) = (c)$. $5 + \Sigma (c) = \lambda (l)$.	Number Living = (l).	Number Dying.
78	11.296 ·88704	4.07759 9.94794	11,956	1,351
79	12.172 ·87828	·02553 ·94363	10,605	1,290
80	13.433 ·86567	3.96916 ·93735	9,315	1,252
81	14.778 ·85222	·90651 ·93055	8,063	1,191
82	16.474 ·83526	·83706 ·92182	6,872	1,132
83	19.031 ·80969	·75888 ·90832	5,760	1,093
84	20.513 ·79487	·66720 ·90030	4,647	953
85	22.043 ·77957	·56750 ·89186	3,694	814
86	23.448 ·76552	·45936 ·88396	2,880	675
87	25.225 ·74775	·34332 ·87376	2,205	556
88	25.301 ·74699	·21708 ·87331	1,649	418
89	25.806 ·74194	·09039 ·87037	1,231	317
90	26.087 ·73913	2.96076 ·86872	914	239
91	29.412 ·70588	·82948 ·84873	675	198
92	33.334 ·66666	·67821 ·82390	477	159
93	43.750 ·56250	·50211 ·75012	318	139
94	55.556 ·44444	·25223 ·64781	179	100
95	75.000 ·25000	1.90004 9.39794	79	59
96	100.000	1.29798	20	—

From the results in Table IV, the following Table of Decrements is derived:—

VI.—*Table of Decrements—Eurasians.*

1 Age.	2 Mortality } = (c). $1 - \frac{d}{100}$	3 $\lambda \left(1 - \frac{d}{100}\right) = (c).$ $5 + \Sigma (c) = \lambda (l).$	4 Number Living = (l).	5 Number Dying.
25	1·122 ·98878	5·00000 9·99510	100,000	1,122
26	1·122 ·98878	4·99510 ·99510	98,878	1,109
27	1·122 ·98878	·99020 ·99510	97,769	1,097
28	1·122 ·98878	·98530 ·99510	96,672	1,085
29	1·118 ·98882	·98040 ·99512	95,587	1,068
30	1·132 ·98868	·97552 ·99506	94,519	1,069
31	1·163 ·98837	·97058 ·99492	93,450	1,087
32	1·211 ·98789	·96550 ·99471	92,363	1,118
33	1·276 ·98724	·96021 ·99442	91,245	1,165
34	1·288 ·98712	·95463 ·99437	90,080	1,160
35	1·352 ·98648	·94900 ·99409	88,920	1,202
36	1·468 ·98532	·94309 ·99358	87,718	1,287
37	1·636 ·98364	·93667 ·99284	86,431	1,413
38	1·856 ·98144	·92951 ·99186	85,018	1,579
39	2·486 ·97514	·92137 ·98907	83,439	2,074
40	2·989 ·97011	·91044 ·98682	81,365	2,432
41	3·366 ·96634	·89726 ·98513	78,933	2,657
42	3·615 ·96385	·88239 ·98401	76,276	2,757

VI.—Table of Decrements—Eurasians—Contd.

1	2	3	4	5
Age.	Mortality } = (c). per Cent. } $1 - \frac{d}{100}$	$\lambda \left(1 - \frac{d}{100}\right) = (c).$ $5 + \Sigma (c) = \lambda (l).$	Number Living = (l).	Number Dying.
43	3·738 ·96262	4·86640 9·98345	73,519	2,749
44	3·123 ·96877	·84985 ·98622	70,770	2,210
45	2·687 ·97313	·83607 ·98817	68,560	1,842
46	2·430 ·97570	·82424 ·98932	66,718	1,621
47	2·352 ·97648	·81356 ·98966	65,097	1,535
48	2·453 ·97547	·80322 ·98921	63,565	1,557
49	3·581 ·96419	·79243 ·98416	62,005	2,220
50	4·464 ·95536	·77659 ·98017	59,785	2,669
51	2·954 ·97046	·75676 ·98698	57,116	1,687
52	3·044 ·96956	·74374 ·98657	55,429	1,687
53	3·140 ·96860	·73031 ·98614	53,742	1,688
54	3·241 ·96759	·71645 ·98569	52,054	1,688
55	3·350 ·96650	·70214 ·98520	50,366	1,687
56	3·466 ·96534	·68734 ·98468	48,679	1,687
57	3·590 ·96410	·67202 ·98412	46,992	1,688
58	3·724 ·96276	·65614 ·98352	45,304	1,687
59	3·868 ·96132	·63966 ·98287	43,617	1,687
60	4·024 ·95976	·62253 ·98216	41,930	1,687

VI.—Table of Decrements—Eurasians—Contd.

1 Age.	2 Mortality } = (c). per Cent. } $1 - \frac{d}{100}$	3 $\lambda \left(1 - \frac{d}{100}\right) = (c).$ $5 + \Sigma (c) = \lambda (l).$	4 Number Living = (l).	5 Number Dying.
61	4.192 .95808	4.60469 9.98140	40,243	1,687
62	4.322 .95678	.58609 .98081	38,556	1,667
63	4.518 .95482	.56690 .97992	36,889	1,667
64	4.673 .95327	.54682 .97922	35,222	1,645
65	4.902 .95098	.52604 .97817	33,577	1,646
66	5.155 .94845	.50421 .97701	31,931	1,647
67	5.435 .94565	.48122 .97573	30,284	1,646
68	5.747 .94253	.45695 .97430	28,638	1,645
69	6.098 .93902	.43125 .97267	26,993	1,646
70	6.494 .93506	.40392 .97084	25,347	1,646
71	6.944 .93056	.37476 .96874	23,701	1,646
72	7.463 .92537	.34350 .96632	22,055	1,646
73	8.065 .91935	.30982 .96348	20,409	1,646
74	8.772 .91228	.27330 .96013	18,763	1,646
75	9.615 .90385	.23343 .95610	17,117	1,646
76	10.239 .89761	.18953 .95309	15,471	1,584
77	10.815 .89185	.14262 .95029	13,887	1,502
78	11.296 .88704	.09291 .94794	12,385	1,399

VI.—*Table of Decrements—Eurasians—Contd.*

1 Age.	2 Mortality } = (c). per Cent. } $1 - \frac{d}{100}$	3 $\lambda \left(1 - \frac{d}{100}\right) = (c).$ $5 + \Sigma (c) = \lambda (l).$	4 Number Living = (l).	5 Number Dying.
79	12·172 ·87828	4·04085 9·94363	10,986	1,337
80	13·433 ·86567	3·98448 ·93735	9,649	1,296
81	14·778 ·85222	·92183 ·93055	8,353	1,235
82	16·474 ·83526	·85238 ·92182	7,118	1,172
83	19·031 ·80969	·77420 ·90832	5,946	1,132
84	20·513 ·79487	·68252 ·90030	4,814	987
85	22·043 ·77957	·58282 ·89186	3,827	844
86	23·448 ·76552	·47468 ·88396	2,983	699
87	25·225 ·74775	·35864 ·87376	2,284	576
88	25·301 ·74699	·23240 ·87331	1,708	432
89	25·806 ·74194	3·10571 ·87037	1,276	330
90	26·087 ·73913	2·97608 ·86872	946	246
91	29·412 ·70588	·84480 ·84873	700	206
92	33·334 ·66666	·69353 ·82390	494	165
93	43·750 ·56250	·51743 ·75012	329	144
94	55·556 ·44444	·26755 ·64781	185	103
95	75·000 ·25000	1·91536 9·39794	82	61
96	100·000	·31330	21	—

On a reference to the column of decrements in the above table and in Table III preceding, it will be perceived, that owing possibly to the small number of lives under observation, there are considerable irregularities. The object was, in the construction of these tables, to give effect, as far as possible, to the actual mortality, leaving others, if necessary, to re-adjust the quantities. Between the ages 45 and 51, the following values may be interpolated in columns 4 and 5 of Tables III and VI:—

Age.	Mixed Class—Table III.		Eurasians—Table VI.	
	Living.	Dying.	Living.	Dying.
46	65,223	2,038	66,718	1,870
47	63,185	2,024	64,848	1,901
48	61,161	2,014	62,947	1,924
49	59,147	2,009	61,023	1,945
50	57,138	2,001	59,078	1,962

From age 51 inclusive, in each table, to the extremity of life, the figures are the same as those in the Northampton table. There are, so far as we are aware, no data available to enable us with any certainty to determine the mortality amongst Uncovenanted Servants and East Indians after 50, and an impression certainly exists that the latter, settled as they generally are permanently in India, do not attain individually to such advanced years as Europeans, nearly all of whom look forward to spending the evening of their days in a more temperate climate. In the absence of the necessary information, it is considered safe to adopt the Northampton table, as representing the mortality after 50.

I should mention that nearly all of the tables in this paper were computed in duplicate by native assistants in India some years ago, in fact, about the time of the Indian mutiny; the educated Bengali, under careful supervision, being, in calculations such as the present, for accuracy and rapidity almost unrivalled.

The following table exhibits the mortality per cent. per annum amongst various classes. With the exception of columns *n* and *o*, the figures in which have reference to both males and females, all the columns refer to the mortality amongst males only; and with the exception of columns *h* to *l*, both inclusive, and column *q*, the results are obtained from the graduated tables of decrements in each case.

VII.—Mortality per Cent. per Annum

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>
Age.	Uncovenanted Service Family Pension Fund.		Bengal Civil Service.		Bengal Military.			
	The whole of the Subscribers. 1837-57.	Eurasian Subscribers. 1837-57.	Davies.* 1780-1838.	Neison.† 1790-1842.	Wool- house.* 1760-1837.	Davies.* 1760-1837.	Neison.§ 1800-47.	
							Excluding Retired.	Including Retired.
20	—	—	1·18	1·18	2·66	2·64	2·23	2·19
25	1·61	1·12	1·54	1·54	2·73	2·72	2·45	2·34
30	1·40	1·13	1·69	1·69	2·91	2·89	2·75	2·62
35	1·42	1·35	1·87	1·87	3·15	3·13	2·90	2·63
40	2·81	2·99	2·09	2·16	3·44	3·43	2·89	2·55
45	2·78	2·69	2·40	2·69	3·81	3·82	3·45	2·92
50	4·63	4·46	2·84	2·61	4·26	4·26	3·39	2·23
55	—	—	3·35	2·56	4·92	4·84	3·83	2·54
60	—	—	4·02	3·26	5·92	5·52	3·96	3·03

* Dodwell and Miles' list.

† Ramchunda Doss' list.

‡ "Report of the Commissioners on the Sanitary State of the Army in India," p. 178.

The figures in columns *b* and *c* indicate the results arising out of the present inquiry. Column *d* is obtained from Mr. Davies' "Report on the Bengal Military Fund," p. 32, the mortality, from age 40 and upwards to the extremity of life, being the same as that given in the Northampton table.* Mr. Neison, after careful examination of the lists compiled by Ramchunder Doss, found the results to approximate so closely to those of Mr. Davies, given in column *d* above, that, "for the sake of comparing the results," he followed Mr. Davies' table up to age 40. From age 45 to the extreme of the table, he adopted the figures in Table XI in his "Report on the Bengal Military Fund," and between the ages 40 and 45 the terms were interpolated.†

The results in columns *f* and *g* are obtained from tables of decrements derived from the data afforded by Dodwell's list. There is a slight difference between the figures, but this may be explained by the circumstance of Mr. Davies, while using Mr. Woolhouse's facts, having graduated a new table therefrom.‡ Columns *h* to *i* inclusive, and column *g*, have been taken for the purposes of comparison from p. 12 of the "Report on the Madras Military Fund," by Mr. Samuel Brown, the late Mr. P. Hardy, and Colonel J.

* Davies' "Report on the Bengal Civil Fund," p. 11.

† Neison's "Report on the Bengal Civil Fund," p. 15.

‡ "Assurance Magazine," vol. xi, p. 5.

amongst Various Classes.

<i>k</i>		<i>l</i>	<i>m</i>	<i>n</i>	<i>o</i>	<i>p</i>	<i>q</i>	<i>a</i>
Madras Military. (Madras Fund.)			European Non- commissioned Officers and Men in India. Dr. Farr.¶ 1847-56.	Assured Lives.		Retired Officers of the Indian Army. Christie.¶	English Life Table, Males. Dr. Farr. 1841.	Age.
Davies.‡ 1808-40.	S. Brown.§ 1808-57.			India. Experience of Oriental and Laudable Insurance Companies. Francis. 1815-47.	England. Committee of Actuaries.			
2.72	3.26	5.64		2.47	.73	—	.92	20
3.06	3.16	4.88		2.72	.78	1.10	.99	25
3.66	3.20	4.96		3.04	.84	1.17	.96	30
3.70	2.94	5.14		3.53	.93	1.29	1.24	35
4.05	2.80	6.16		4.21	1.04	1.47	1.21	40
4.14	2.68	5.74		4.86	1.22	1.77	1.70	45
3.74	2.75	5.61		5.46	1.59	2.23	1.85	50
4.09	3.06	5.47		5.90	2.17	2.86	2.86	55
5.73	2.75	5.46		6.47	3.03	3.66	3.40	60

‡ Colonel de Havilland's data.

§ Patronage Books of the India House.

¶ *Journal of the Statistical Society*, vol. i, p. 279, &c., &c.

T. Smith; and we are indebted for the figures in column *m* to Dr. Farr.

The figures in columns *n* and *o* have reference to *policies* of assurances, and not *lives*. Those in *o* are obtained from what are known as the “Experience Tables,” exhibiting the rate of deaths according to the combined town and country experience (excluding Irish), comprised in 62,537 assurances.

It is impossible to conclude this paper without a word of congratulation on the important fact that the most recent investigation into the mortality of European military officers in India confirms the conclusions arrived at by Mr. Neison in his reports on the Bengal Civil and Military Funds, and is fully in accordance with impressions which have long prevailed, “that the high rate of mortality “which formerly occurred in India was due to preventible causes, “and that a great change for the better, owing to improvement in “habits or better sanitary regulations, has for many years been “going on.” The “Report on the Madras Military Fund,” by Mr. Samuel Brown and his colleagues Mr. Peter Hardy and Colonel Smith, recently published, is perhaps the most important treatise upon this deeply interesting subject which has yet appeared. Exception has always been taken to the investigations by Mr. Woolhouse, Mr. Davies, and others, on the ground that their facts were obtained from Dodwell and Miles’ lists. Mr. Brown’s observations

embrace 5,000 names, and extend over a period of fifty years, from 1808 to 1857; and the whole of the lists originally furnished by Colonel Smith were carefully compared and checked with the patronage books by the authorities at the India House. Moreover, the whole period of fifty years was subdivided into five consecutive decennial periods, and the result is as above. The improvement is said to be "most marked at the younger ages, and progressive at all ages in which the facts are sufficiently numerous to allow of an average result being calculated."

But I need not allude further to Mr. Brown's remarkable report, which is no doubt familiar to many of my hearers.

It is distressing to turn from Mr. Brown's report, to the "Report of the Commissioners appointed to inquire into the Sanitary State of the Army in India," and mark the frightful disparity between the mortality in India of European commissioned officers and European non-commissioned officers and men as exhibited by columns *l* and *m* respectively of the preceding table. The question, as is well known to many of my hearers, is one of imperial importance, and its solution a matter of urgent necessity. For while, on the one hand, we are assured that British empire in India will be seriously imperilled by any reduction of the permanent European force below 73,000 men, Sir A. Tulloch and others "very much question whether, with the mortality rate of the last forty years, it will be possible for England to keep up an army of 73,000 men in India." It is a matter therefore of almost personal importance to every Englishman living, that immediate effect be given to the recommendations of the Sanitary Commission, and every human means adopted for checking this terrible mortality.

The report of the Commissioners concludes with the recommendation that a system of registering deaths, and the causes thereof, be established in the large cities of India, so as to determine the effect of local causes on the native and European population. Antecedent to this, however, it would be necessary to ascertain the population of the presidency towns. That of Calcutta, the metropolis and seat of the Government, has as yet only been rudely approximated to. The Municipal Commissioners, in their report for 1859-60, say that "they have not been able to devise any plan by which the real extent of the European population can be ascertained with anything approaching to accuracy." Captain Birch attempted a census in 1837, which assigned the entire population at 229,714 souls; and again in 1843, when it was found that the native population was rather less than in 1837.* The results for 1837 were analysed by Colonel Sykes.† The population has recently been

* Dr. Stewart's "Report on Small Pox in Calcutta."

† *Statistical Journal*, vol. viii, p. 50.

returned at 413,182, independently of the suburbs. Curiously enough, while there are no means of approximating accurately to the population of Calcutta, there is a careful registry of the deaths amongst the natives. This record of native deaths has been kept by the police authorities at the different ghats and gharastans, where alone the funeral rites of cremation and interment are permitted to the Hindoo and Mussulman inhabitants, since the beginning of the present century. I can recollect, while residing in Calcutta, making an application through a friend to the chief magistrate, for permission to examine these records. The result would have moderated the ardour of the most enthusiastic statist, for in a few days there appeared about a dozen of coolies carrying bags so numerous that eventually they filled a considerable space in a pretty large apartment. These contained the records of the native deaths in Calcutta from 1802, and were written in Bengalee, detailing the name, age, sex, caste, residence, occupation, disease, duration of sickness, &c., of each individual deceased. So minute were the particulars, in fact, that the cost of the wood required to burn each body was faithfully narrated.

Little can be done for Calcutta in sanitary respects until a thorough reform has been effected in the manners and customs of the natives. It is a reproach to public decency, that there are at present about 6,000 bodies burnt yearly within the precincts of the city of palaces, and from 5,000 to 6,000 thrown into the river. The river as it ebbs and flows carries to and fro, in every stage of decomposition, the loathsome burden committed to its care. Permanently on the staff of every European *ménage* of consequence located on the banks, there is a native servant called—if I recollect rightly—a *dome*, whose special province it is, with a long pole, to keep the floating bodies at a reasonable distance from the residence of the sahib, and prevent the foul effluvium coming between the wind and his nobility. No wonder that in Calcutta even now, during the hot and rainy season, when cholera stalks abroad, it occasionally happens that you bury your friend, instead of dining with him as you expected the evening before.

Some of my hearers, interested in India, will no doubt have noticed that an attempt was very recently made by the Government of India to abolish the system which has so long prevailed in Calcutta of burning the dead within the precincts of the city. The attempt has, I believe, failed, and the authorities have been compelled to yield to the religious sentiments of the natives. “The ghats are to remain where they are, but chemical means, we are told, are to be taken to do away with the noxious gases.”

It was my intention to have furnished on this occasion a few original statistics of the mortality of Eurasian females, and also

certain particulars touching the mortality amongst the burgher population of Ceylon. These must be reserved for another occasion. The Dutch burghers fill much the same place in society in Ceylon as the Eurasians do in India. Descendants of the original Dutch settlers, by intermarriages with the natives, are to be found, says Sir Emerson Tennent, "in every administrative establishment in Ceylon, from the department of the Colonial Secretary to the humblest police court."*

* "Ceylon," vol. iii, p. 156.

STATISTICS of the CITY of ABERDEEN. *Compiled by* JAMES VALENTINE, *and Communicated by* COLONEL W. H. SYKES, M.P., F.R.S., *President of the Statistical Society.*

[Read before the Statistical Society, 21st June, 1864.]

THE following tables are so exhaustive of local statistical subjects, and are so condensed and yet so perspicuous and instructive, that they may be held up as models for statistical reports ; and I have, therefore, thought that they might be acceptable for reference in the pages of the *Journal of the Statistical Society*. Their compilation is due to the praiseworthy industry of Mr. Valentine, who is on the staff of the "Aberdeen Journal ;" and his work has been a labour of love for many years past, stimulated to the undertaking by the example of the late lamented Dr. Strang ; an example, let us hope, which will be followed to great public advantage in cities and towns of Great Britain and Ireland.

The parliamentary boundary of the city of Aberdeen is more than nine miles in extent, and is considerably larger than the parliamentary boundary of any town in Scotland.

The statistics embrace the annual returns from 1857 to 1863, both inclusive.

The two parishes of St. Nicholas and Old Machar embrace the whole of the parliamentary boundary of the city, and a small district north of the Don besides—the latter we omit for 1862 and 1863. The results, however, comparing these with the previous years, are not appreciably affected. The population of St. Nicholas in 1861, was 41,962 ; of Old Machar, 31,938 (excluding 1,298 inhabitants in the landward portion of the parish) ; together 73,900 persons.

I.—*Births.*

	St. Nicholas.	Old Machar.	Total.
1857	1,431	972	2,403
'58	1,531	898	2,429
'59	1,521	933	2,454
'60	1,463	1,010	2,473
1861	1,552	949	2,501
'62	1,635	957	2,592
'63	1,662	1,018	2,680

Note.—One birth in 30·4 in 1857 ; 1 birth in 27·7 in 1863.

Of the above, the following were illegitimate:—

Illegitimate Births.

	St. Nicholas.	Old Machar.	Total.
1857	206	116	322
'58	252	108	360
'59	253	122	375
'60	258	140	398
1861	238	105	343
'62	271	134	405
'63	290	139	429

Note.—One illegitimate to 7·4 legitimate, or 13·4 per cent. in 1857.

„ 6·2 „ 16·2 „ '63.

II.—*Marriages.*

	St. Nicholas.	Old Machar.	Total.
1857	319	221	540
'58	326	185	511
'59	324	217	541
'60	362	225	587
1861	331	274	605
'62	306	288	594
'63	337	288	625

Note.—One marriage to 135 inhabitants in 1857.

„ 117 „ '63.

1. *Ages of Persons Married (1863).*

	Males.	Females.
20 and under	45	134
20 to 30	412	399
30 „ 40	100	64
40 „ 50	51	23
Above 50	17	5

Note.—Average age over all $28\frac{2}{3}$ males, $25\frac{1}{2}$ females. The ages ranged from 15 up to 65.

2. *Widowers or Widows (1863).*

19 Widowers married widows.

54 „ „ spinsters.

21 Bachelors „ widows.

3. Religious Denominations (1863).

Couples Married by Ministers of—

Established Church	305
Free Church	181
United Presbyterian Church.....	41
Congregational Church	39
Episcopalian Church.....	17
Roman Catholic Church	17
Other denominations	25

III.—Deaths.

The number of deaths registered in each of these seven years was as follows :—

	St. Nicholas.	Old Machar.	Total.
1857	1,036	686	1,722
'58	1,010	618	1,628
'59	1,006	681	1,687
'60	1,353	856	2,209
	1,146		
1861		636	1,782
'62	1,191	733	1,924
'63	1,102	647	1,749

Note.—1 death in 42·1 inhabitants, or 2·3 per cent. in 1857.
1 " 42·5 " 2·3 " '63.

The deaths in 1860 were exceptionally large, arising from a great prevalence of epidemic diseases in the early part of the year. A similar remark applies to 1862—measles being epidemic, and latterly somewhat fatal, towards the close of the year. Typhus, as will be observed below, was also prevalent towards the end of last year.

1. Ages at Death (1863).

Age.		Age.	
0—5	607	20—60	643
5—20	150	60 and upwards	449
Total	1,749		

2. Causes of Death in Aberdeen (in Six Classes of Disease).

Small pox	54	Diarrhœa	} 45
Measles	30	Dysentery	
Diphtheria	42	Cholera.....	
Hooping cough	37	Typhus.....	129

73 of the deaths from typhus occurred in October, November, and December; 62 of them being in the parish of St. Nicholas and 11 in Old Machar. This includes, however, infirmary cases, all of which are registered in St. Nicholas, though they may have come from other parishes.

Educational Index.

Under this head we state the number of persons giving information at the Registration Offices who sign by marks, not being capable of writing their own names.

	1863.—Reporting.			
	Births.	Deaths.	Marriages.	Total.
St. Nicholas	246	176	68	490
Old Machar	70	57	42	169
Grand total.....	316	233	110	659

The following table is applicable to the last seven years :—

	Events Reported.	Number Signing by Marks.
1857	4,665	626
'58	4,648	624
'59	4,682	605
'60	5,269	801
1861	4,888	706
'62	5,110	726
'63	5,054	659

Note.—15·4 per cent. in 1857; 13·04 per cent. in 1863.

In regard, however, to the “number signing by marks,” a distinction has to be taken, which is often very important in statistics. In strict accuracy, the *marks* do not always represent different *persons*; for a person may register more than one event in course of a year. A large number of events, however, are registered by the officials of different institutions—the infirmary, poor-house, &c.; otherwise the marks would be more numerous.

IV.—Public Health.

Total number of cases treated at the following institutions :—

	1857.	1858.	1859.	1860.	1861.	1862.	1863.
At Royal Infirmary	1,872	1,932	1,805	2,159	2,166	1,972	2,120
Ditto out-door (about)	370	400	460	630	460	610	700
At General Dispensary	5,806	5,345	6,218	7,808	7,612	7,654	7,899
By parochial board officers—							
St. Nicholas	1,385	1,475	1,434	1,492	1,402	1,298	1,556
Old Machar	1,215	1,196	1,090	1,356	1,306	1,237	1,270

V.—Lunacy.

Abstract of cases at the Royal Lunatic Asylum, Aberdeen :—

Year.	Admitted.	Mean Number Resident.	Recovered.	Improved, &c.	Died.	Total Number under Care and Treatment.
1857	84	299	50	11	21	376
'58	102	295	39	52*	15	396
'59	84	300	43	15	9	374
'60	78	308	32	18	22	385
1861	104	318	48	28	19	417
'62	88	322	48	20	20	410
'63	128	343	53	14	22	450

Note.—Percentages cannot be given to population, as many lunatics are received from Aberdeenshire.
* This figure is above an average, owing to the number of lunatics, not from Aberdeenshire, removed under the requirements of the Lunacy Act.

VI.—Pauperism.

Comparative state of the Roll of Paupers at 31st December, yearly :—

	St. Nicholas.	Old Machar.	Total.
1857	1,035	908	1,943
'58	1,041	878	1,919
'59	985	865	1,850
'60	974	839	1,813
1861	1,016	861	1,877
'62	967	877	1,844
'63	948	864	1,812

Note.—1 pauper in 37·6, or 2·9 per cent. in 1857.
1 " 41 inhabitants, or 2·4 per cent. in 1863.
These numbers do not include dependents of paupers.

VII.—Industrial Schools.

1. Particulars for 1863.

	Average Number on Roll.	Average Attendance.	Left directly for Work.	Remaining on Roll 1st January, 1864.	Average Cost per Child, 1864.
Boys' Industrial School	124	116	16	100	£ s. d. 4 9 —
Juvenile ditto ditto, boys	60	55	18	60	} 5 2 5
" " girls	65	59	15	50	
Aberdeen Female In- } dustrial School }	80	75	25	80	5 12 4
Sheriff Watson's ditto....	66	50	12	59	4 — —
Oldmill Reformatory	75	75	21	90	6 11 1*
Girls "	11	11	—	13	17 12 8

* For food only.

2. Total Results for Seven Years.

	Average Number on Roll.	Average Atten- dance.	Left directly for Work.	Remaining on Roll, 1st January, 1864.	Average Cost per Child, 1864.
					£ s. d.
1857	299	274	63	302	3 19 1
'58	364	342	65	380	3 18 10
'59	374	353	71	369	4 2 2
'60	383	343	56	406	3 19 10
1861	423	384	65	439	4 10 10
'62	437	408	95	419	4 6 2
'63	481	441	107	452	4 15 9
Total	—	—	522	—	—

VIII.—Crime.

1. Year 1863.

- (1.) Total Aberdeen Police Court cases 1,578
 (2.) Committals to Aberdeen prisons and prisons in the county 1,082

2. Results for Seven Years.

	Police Cases.	Prison Commitments.	Commitments of Children at 12 and under.
1857	1,325	820	40
'58	1,438	885	15
'59	1,275	910	23
'60	1,245	785	13
1861	1,114	772	24
'62	1,636	1,150	27
'63	1,578	1,082	22

Note.—Police, 1 in 55 inhabitants, or 1·8 per cent. Prison, 1 in 89 inhabitants, or 1·1 per cent in 1863.

Police, 1 in 47·1 of inhabitants, or 2·2 per cent. Prison, 1 in 70 inhabitants, or 1·4 per cent. in 1863.

In police cases, the recent increase has arisen from the operation of the New Police Act of the town. During 1863, in addition to the above, there were the following cases in the Burgh Court, viz.:—breaches of public house amendment act, 26; drunk and incapable,

281 men and 151 women; and 8 shebeen keepers. The same observation—as to the effect of the New Police Act—applies, partly, to the criminal commitments.

IX.—*Provident Institutions.*

1. *National Security Savings Bank.*

The following are the transactions of this institution for the past year, and the six immediately preceding, ending on 31st December:—

Year.	Amount Deposited.	Interest Added.	Amount Withdrawn, Including Interest.	Increase.
	£	£	£	£
1857	46,341	5,225	52,126	559*
'58	55,307	5,356	44,859	15,804
'59	61,566	5,917	47,466	20,017
'60	58,312	6,427	51,870	12,870
1861	56,255	6,704	56,602	6,357
'62	63,154	7,003	56,979	13,178
'63	65,524	7,462	61,958	11,028

* Decrease.

2. *Penny Banks.*

Amount deposited in the National Security Savings Bank of Aberdeen, during year ending 31st December, 1863:—

	£	s.	d.
1. Northfield	145	10	6
2. Victoria	312	8	6
3. Woodside	91	—	7
4. Ruthrieston	85	7	—
5. Upper Denburn	34	9	8
6. Cove	84	—	9
7. Hardgate	76	15	—
8. Woodside, Cotton, and Tanfield	114	—	—
9. Militia	54	—	—
10. Skene Street School of Industry	—	18	4
Total	998	10	4

Cove is, of course, beyond the limits of the town—on the other hand, however, there are several of these banks in the city that do not deposit their funds with the National Security Savings Bank.

3. Aberdeen Post Office Savings Bank.

	Books Issued.	Deposits.		Withdrawals.	
		Number.	Amount.	Number.	Amount.
			£		£
From opening of Bank till 31st December, 1863	688	2,289	6,101	625	2,234
During 1863	312	1,354	3,469	447	1,746

4. Mercantile Marine Office.

(1.) Money Orders Issued and Paid.

	Issued.		Paid.	
	Number.	Amount.	Number.	Amount.
		£		£
1860	740	2,760	1,739	8,518
'61	722	1,989	1,910	9,866
'62	869	2,746	1,924	9,730
'63	797	2,838	2,054	10,890

X.—Public Baths.

Total baths taken :—

1857	9,637	1861	11,717
'58	10,681	'62	11,626
'59	9,843	'63	12,073
'60	9,864		

The following tables refer chiefly to trade and commerce :—

I.—Custom House.

The following is an abstract of the Shipping and Revenue of Customs Returns for the past seven years :—

1. Coasting Trade.

Year.	Entered Inwards.		Cleared Outwards.	
	British Vessels.	Tons.	British Vessels.	Tons.
1857	1,654	281,293	929	210,711
'58	1,709	265,740	1,071	195,323
'59	1,717	273,192	1,023	192,050
'60	1,736	281,219	1,065	204,157
1861	1,907	303,408	1,081	209,381
'62	1,859	310,807	1,146	226,298
'63	1,693	273,281	1,021	193,859

Note.—In this table, certain articles, as lime, stones, &c., are not included.

2. Import Trade.

Year.	British Vessels.	Tons.	Foreign Vessels.	Tons.
1857	90	18,176	128	13,138
'58	81	14,816	140	14,515
'59	81	12,050	150	14,423
'60	106	16,769	181	20,158
1861	117	17,522	160	15,645
'62	129	19,129	170	18,676
'63	146	25,097	147	18,057

3. Total Customs Duties.

		£
Collected in	1857	93,936
	'58	93,400
	'59	97,324
	'60	94,383*
	1861	93,300
	'62	93,665
	'63	83,314*

* Remission of duties on tea.

4. Shipping Belonging to the Port.

		Vessels.	Tonnage.
On 31st December	1857	267	70,319
	'58	275	73,092
	'59	266	72,768
	'60	276	78,696
	1861	270	78,696
	'62	269	80,224
	'63	267	80,813

II.—Ship Building.

Number of vessels launched, with tonnage, in each of the following years: —

Year.	Vessels.	Tons. Builders' Measure.
1856	13	6,529
'57	12	6,471
'58	11	5,563
'59	6	3,558
'60	12	6,700
1861	7	4,664
'62	16	8,405
'63	13	8,168

Within the above period there has been a change in the measurement. We do not think, however, that this materially affects the basis we have adopted.

III.—Post Office.

1. Letters.

The letters delivered from the Post Office here (as elsewhere) are counted during one week in each quarter of the year. The number of letters delivered during the counting week in :—

January was	58,630
April ,,	57,267
July ,,	59,516
October ,,	62,881
<hr/>	
Average per week	59,573
<hr/>	
Estimated total for the year.....	3,097,796
<hr/>	

Average of sub-office letters (included in above) per week, 21,070—
—or in the year, 1,096,056.

This last item has to be taken into account in the following table as well :—

2. Letters delivered at Aberdeen for Seven Years.

Year.	Weekly Average.	Estimate for Year.
1857.....	46,035	2,393,820
'58.....	47,210	2,454,920
'59.....	48,455	2,519,670
'60.....	51,658	2,686,222
1861.....	54,132	2,815,228
'62.....	57,039	2,965,054
'63.....	59,573	3,097,796

3. Newspapers and Book Packets.

	Year 1863.		
	Newspapers bearing Impressed Stamp.	Newspapers bearing Postage Stamp, or otherwise Charged.	Book Packets.
	322,686	217,171	23,569
Estimated totals (made up from counting week }			
1862.....	311,142	190,879	22,620

4. Money Orders for 1863 and Six Previous Years.

Year.	Issued.		Paid.	
	Number.	Amount.	Number.	Amount.
		£		£
1857	17,162	33,451	22,204	42,320
'58	18,744	35,966	22,235	42,755
'59	18,854	35,811	22,502	44,320
'60	20,270	38,684	23,135	45,650
1861	20,657	40,514	24,452	48,954
'62	21,224	45,574	24,092	52,481
'63	21,290	46,986	25,531	56,397

5. Amount of Commission for Seven Years.

	£	s.	d.
1857	289	9	3
'58	313	7	3
'59	315	19	6
1860	340	7	9
'61	350	5	3
'62	385	16	6
'63	401	8	9

For Post Office Savings Banks, see “Provident Institutions.”

IV.—Cattle Trade.

The following number of cattle and tons of dead meat were sent south, and chiefly to the London and other markets, during 1863 and six previous years :—

Year.	Cattle.	Dead Meat.
	No.	Tons.
1857	19,171	5,494
'58	19,256	3,520
'59	20,412	6,953
'60	17,775	5,822
1861	17,176	8,168
'62	10,799	9,468
'63	13,786	9,453

The following table shows what was sent by rail and sea, respectively :—

Year.	Cattle.		Dead Meat.	
	Rail.	Sea.	Rail.	Sea.
	No.	No.	Tons.	Tons.
1857	13,392	6,279	5,000	496
'58	14,133	5,123	5,226	294
'59	13,130	7,282	6,905	48
'60	13,993	3,782	5,769	53
1861	8,852	8,324	8,041	127
'62	6,281	4,518	9,392	76
'63	9,623	4,163	9,395	58

[The above concludes Mr. Valentine's valuable tables. The population of the city of Aberdeen within the parliamentary boundaries, I extracted from the census returns of 1861, and have computed the increase up to 1863 inclusive ; and, upon this computation have deduced the percentages.

W. H. Sykes.]



STATISTICS of CRIME in RUSSIA. By T. MICHELL, F.R.G.S.,
*Fellow of the Imperial Geographical Society of Russia, Fellow of
the Agricultural and Entymological Societies of St. Petersburg,
Honorary Member of the Statistical Society of London.*

[Read before the Statistical Society, 21st June, 1864.]

CONTENTS:

	PAGE		PAGE
I.—Crimes and Accidents	369	III.—Table of Accidents, Crimes, &c.....	374
II.—Consumption of Spirits	372		

I.—Crimes and Accidents.

FOR the first time, the Russian Government has just published a table of crimes and accidents, embracing a period of four months in the year 1863, founded on data afforded by official and judicial investigation. The figures have no claim to great correctness, for much crime must necessarily escape the attention of the Imperial Government in such a vast country and under corrupt influences ; and the statistics now presented must, therefore, be considered as very much understated. But a review of even the minimum amount of crime in Russia, is a valuable addition to our statistical stores.

The first column of the table shows that 3,049 fires occurred during the first four months in 1863 (as far as information had reached the capital), inflicting a loss estimated at about 570,000*l*. These figures are but slightly approximate of the truth. Fewer fires occur in the months embraced in the table than during the months of summer, when the combustible materials of Russian houses are more easily ignited. The cause of so many fires has not yet been thoroughly ascertained. Incendiarism is supposed to contribute largely to the number, and their frequency in times of political agitation gives some colour to the supposition that all the fires are not accidental, but often regulated by some mysterious and malevolent human agency. A sect of religious dissidents, professing the doctrine of purification by fire, is sometimes reproached with the crime of incendiarism ; at others, the Poles are considered by the common people to be the authors of such disasters. Some

university riots at St. Petersburg and Moscow, in the year 1861, were accompanied by almost daily conflagrations of great magnitude, occasionally predicted by anonymous threatening notices. In this case, the fires were attributed, both by the Government and the people, to revolutionary actors in general, and particularly to the discontented students in the interest of the malcontent "Boyars" and Poles. However incredible it is, that scholars and patriots should resort to incendiarism as a means of kindling the fire of internal revolution, it is nevertheless a fact that fires in Russia are frequently in intimate connection with the state of public feeling. In the case of the university riots, the fires were of immense service to the Imperial Government, which was thus enabled to show how pernicious the effects of revolutionary lawlessness might be. The deaths from fires are recorded to have been 126.

The columns which state the cases of premature deaths by violence or accident are worthy of much attention, showing as they do a minimum waste of human life far greater than in any other State in Europe. But in reading these figures, due allowance should be made for the extent and the nature of the country to which they refer. The natives of Russia Proper should not be taxed with the crimes of barbarous subject races; and the inequality of population and education must disturb considerably any deductions founded on the above data as to the criminality of the Russian race.

During the first four months of the past year, 7,155 persons are reported to have died prematurely, inclusive of 1,553 dead bodies found. This would give 59 cases of premature deaths per diem, and the daily decrease of human life throughout the Russian empire being computed at 5,700, about 1 per cent. of the total mortality is caused by crime or accident discovered and reported.

This minimum of 1 per cent. may be analysed as follows:— 22 per cent. consisted of dead bodies found without any assignable cause of decease. This will naturally embrace many cases of undiscovered or unpunished crime; 34 per cent. are officially referable to apoplexy, and other sudden deaths by violence or the visitation of God, not specially recorded. The abuse of liquor produces 13 per cent. of the daily premature mortality; $8\frac{1}{2}$ per cent. are made up of cases of death by drowning; 6 per cent. of suicides; $5\frac{2}{3}$ per cent. of accidents by falls of earth, trees, &c., while recognized and investigated murders yielded $5\frac{1}{2}$ per cent. The cases of manslaughter make up $1\frac{3}{4}$ per cent. more to be added to the statistics of human violence. The remainder is referable to deaths from the very opposite causes of fire and frost.

Apart from sudden deaths, drunkenness would therefore appear to be the most fertile source of untimely decease. The statistics under this head afford an instructive commentary on the reform

in the excise law of Russia, which came into operation last year. The system of farming the revenue from the sale of spirits was abolished, and the price of liquor reduced with a view to greater consumption. Those measures were effectual in making the people drink, in 1863, 34,509,634 gallons more than in 1862. Other liquors, such as beer and mead, were cheapened and drank in proportion. In 1863 the 59,891,069 inhabitants of Russia in Europe drank 68,400,300 gallons of pure spirit. The result of such a policy is as yet but faintly visible in the above table, which shows 7 deaths per diem from drunkenness during the period under consideration. The twenty-six provinces of Great Russia, or Russia Proper, suffered most, having in four months lost 764 of their population by this vice. In those provinces, however, where the new system resulted in raising the price of spirituous liquors, the cases of deaths from drunkenness were only on an average 3 per province.

The deaths from drowning were 612, or more than 5 a-day. They were mostly caused by carelessness in crossing thin ice, and more than half were cases of children accidentally drowned in ponds and rivers.

There were 433 cases of suicide during the four months. The ascertained murders amounted to 393, and occurred principally in the provinces of Baku (on the Caspian), Viatka, Tomsk, Perm, Kovno, Vitebsk, Poltawa, Kherson, Podolsk, and Kieff.

Premature deaths were most numerous in the provinces of Viatka, Voroneje, Perm, Tambof, and Moscow; and least frequent in those of Courland and Esthonia, on the Baltic, which generally appear very favourably in the statistics of morality.

The practice of deserting illegitimate children is very general in Russia, particularly in the manufacturing districts of Tver, Jaroslaf, and Nijni-Novgorod; but the figures presented under this head are very far from giving a correct idea of the illegitimacy which prevails there, large institutions existing for the care of children brought to the door by mothers unable or unwilling to support them.

Such is the approximate computation of crimes and accidents in Russia, now published in the "Northern Post," the official organ of the Minister of the Interior. The statistics for a later period, officially promised to the public, will enable the statistician to appreciate more fully, and with greater certainty, the value of these now submitted to his inspection. It should be observed, that the table does not record the fruitful cause of mortality which obtains in Russia—the almost total absence of medical men in the agricultural districts, nor the excessive mortality from improper food and unskilled medical treatment in hospitals.

The reckless neglect of children in villages, and the influence on them of a rigorous climate, conduce likewise to arrest a stronger increase of the population.

II.—*Consumption of Spirits.*

The brandy-farm system, which had always yielded a very considerable revenue to the Russian Government, was abolished in 1862, notwithstanding the strong opposition of the class interested in its maintenance. These urged that the old mode of collecting the excise duties was both certain and simple, and that the Government were not justified in sacrificing any portion of the public income at a time of such great financial distress. Their own experience of corruption enabled them to prognosticate that the Government would lose largely by the defalcations of the new excise officers who had to be appointed. The Minister of Finance, adopting the views of the brandy farmers to some extent, provided for a considerable deficit in the budget of 1863, under the head of excise on spirits, notwithstanding that he reckoned upon a much larger consumption from the cheapening of the article. During the last four years of the farm system, the sale of spirits had on an average yielded nearly about 15,619,757*l*.* The budget for 1863 anticipated a revenue of 14,700,135*l*. Contrary, however, to all expectation, the yield was no less than 16,244,500*l*. in European Russia alone, making an excess of 624,743*l*. over the average yearly revenue between 1859 and 1862, and 1,544,368*l*. above that which had been anticipated in the budget. The sale of spirits in 1864 is expected to yield a net revenue of about 18,000,000*l*.† In 1862 the expense of collecting the duty on spirits in Russia in Europe, inclusive of the country of the Don Cossacks, was only 258,355*l*. In 1863, under the new law, the cost of collection was 1,326,935*l*., or 1,068,580*l*. more than in the previous year; reducing the net revenue, in 1863, as compared with 1862, by 443,837*l*. At the same time the consumption of spirits throughout Russia, with the exception of the Baltic provinces, increased 25 per cent. in 1863, as compared with the preceding year. In the fifty European provinces of Russia, each inhabitant paid to the State—under the item of excise duties alone—the sum of 5*s*. 5*d*. per head in 1863, or about 2*d*. more than in 1862.

These results cannot, however, be regarded as fixing accurately or generally the proneness of the people of Russia to consume strong drinks. The above figures show only the first effects of a reduction in the price of liquor, although the statistics of the pre-

* Reckoning throughout the rouble at 36*d*.

† The total net revenue of the empire for 1864, is estimated at 47½ millions sterling, exclusive of the cost of collection, which is about 5,000,000*l*.

vious years are certainly high enough. The nature of the climate promotes recourse to beverages that heat the system, and probably created the national custom of deep potation on every occasion of solemnity or merriment. Births, deaths, and marriages, are very favourable to the increase of the revenue. The statistics of these for 1863 were as follow: —

Marriages according to the Russo-Greek rite.....	673,749
Deaths	2,026,618
Births.....	2,815,041
<hr/>	
Total	5,515,408
<hr/>	

It would thus appear that, independently of the numerous holy-days which the Greek Calendar affords, the Russian people had 5,515,408 opportunities of consuming an extra quantity of liquor. Deducting even the deaths of persons under the age of 15, whose loss would probably cause less grief, and entail less recourse to oblivion, there would still remain 4,181,725 occasions on which brandy, beer, and mead must necessarily be drunk in great quantities. An allowance might even be made of 10 per cent. on the births, as the produce of illegitimacy, which public morality will not suffer to be fêted. But over and above these, the Russian people are in the habit of drinking largely at church festivals, birthdays, saints' days; on the receipt of rewards, or on promotions; on the occasion of advantageous commercial speculations; at the termination of harvest; the arrival and departure of friends. Workmen, soldiers, and sailors, are equally rewarded with extra rations of corn brandy.

All these inducements to abuse of liquor already existing, the Russian Government intend to raise once more the duty on spirits, in order not to be accused of promoting their consumption. The immense increase of drinking shops in Russia, the dismal pictures of intoxication which the streets of every town and village now afford, including the old and the young, and irrespective of sex, certainly calls loudly for some legislation by which the evil of drunkenness may be reduced within the narrowest limits, regardless of the interest of the imperial exchequer.

III.—*Table of Crimes and Accidents in the Russian Empire during*

Name of Province or Town.	Number of Fires.		Premature					
	In Towns.	In Villages.	From Fire.	Suicides.	Murders.	Man- slaughter.	From Drowning.	Crushed by Trees, Falls of Earth, &c.
Archangel	1	15	1	—	2	2	6	2
Astrakhan	3	5	—	3	2	2	7	1
Wilna	17	38	1	7	2	1	17	5
Witebsk	11	32	—	5	12	—	9	1
Wladimir	6	66	4	4	6	2	15	11
Vologda	3	24	—	—	8	2	1	3
Volynsk	24	51	1	6	4	3	4	15
Voronej	43	80	3	7	3	13	37	17
Viatka	5	114	4	27	20	13	10	9
Grodno	9	53	5	5	8	—	8	2
Ekaterinoslav	8	9	—	6	1	1	15	7
Eniseisk	9	25	7	9	7	2	3	9
Irkutsk	3	10	—	9	9	—	4	—
Kazan	3	62	4	9	5	4	11	2
Kaluga	7	65	2	3	1	1	12	6
Kiev	48	68	2	18	11	5	19	22
Kovno	24	99	9	5	16	1	8	11
Kostroma	2	54	2	4	8	—	11	5
Courland	—	25	5	3	1	—	4	1
Kursk	16	82	6	8	4	6	9	18
Lithuania	10	45	3	16	1	1	14	11
Minsk	12	28	1	9	6	3	10	5
Mogilev	12	32	1	1	5	5	7	6
Moscow	3	103	4	9	6	3	13	9
Nijnenovgorod	4	86	2	3	6	1	20	8
Novgorod	4	34	1	6	3	2	8	6
Olonetsk	3	32	—	1	2	1	1	5
Orenburg	10	53	1	5	8	5	27	12
Orël	12	77	4	6	6	—	15	11
Penza	14	62	—	7	3	—	17	5
Perm	7	42	1	10	16	4	17	8
Podolia	42	81	4	10	11	3	16	16
Poltava	7	35	1	18	12	3	11	2
Pskov	7	48	—	8	5	—	7	1
Riazan	10	81	2	9	6	—	17	3
Samara	3	35	1	4	7	2	10	6
St. Petersburg	6	26	3	16	5	2	17	6
Saratov	16	56	3	7	1	2	10	4
Simbirska	6	16	7	3	5	—	4	3
Smolensk	8	7	3	2	4	2	1	3

the Months of January, February, March, and April, 1863.

Deaths.				Missing.	Children Left at Doors.	Robberies.	Robberies in Churches.	Deaths from Hail Storms.	Name of Province or Town.
From Drunken- ness.	Frozen.	Other Causes of Death.	Dead Bodies Found.						
17	1	21	9	2	—	9	1	—	Archangel
1	—	16	15	1	13	5	1	—	Astrakhan
2	1	23	18	—	—	13	1	—	Wilna
2	2	22	16	—	1	4	—	—	Witebsk
51	4	73	23	—	11	14	—	—	Wladimir
48	3	74	21	—	3	2	1	—	Vologda
14	—	35	16	—	1	1	1	—	Volynsk
41	—	78	35	—	16	2	—	—	Voronej
73	2	84	80	2	7	6	—	—	Viatka
1	—	53	43	—	—	5	—	—	Grodno
—	1	28	12	—	—	1	—	—	Ekaterinoslav
21	2	20	23	—	—	3	—	—	Eniseisk
19	3	19	29	—	6	—	—	1	Irkutsk
13	—	65	65	3	18	3	—	—	Kazan
15	2	38	14	—	11	1	—	—	Kaluga
3	2	75	29	—	4	4	3	—	Kiev
1	1	16	9	—	—	10	—	—	Kovno
15	—	17	34	—	7	2	1	—	Kostroma
—	—	7	3	—	1	1	—	—	Courland
4	5	109	29	1	13	3	—	—	Kursk
4	—	18	11	—	5	3	1	—	Lithuania
2	—	22	13	1	—	—	1	—	Minsk
8	3	19	13	—	—	—	—	—	Mogilev
22	3	73	68	2	8	8	3	—	Moscow
28	5	49	33	—	25	17	2	—	Nijnenovgorod
25	2	26	35	—	9	—	2	—	Novgorod
3	—	21	8	2	2	1	—	—	Olonetsk
38	5	53	30	1	1	—	—	—	Orenburg
35	5	28	12	—	18	5	3	—	Orël
31	6	60	42	—	7	1	—	—	Penza
53	3	68	45	2	3	4	—	—	Perm
4	5	47	15	—	1	2	3	—	Podolia
—	—	36	23	—	—	—	—	—	Poltava
7	1	26	38	1	3	—	—	—	Pskov
38	5	64	40	2	2	1	1	—	Riazan
29	4	46	25	—	3	—	2	—	Samara
12	1	62	35	—	3	2	—	—	St. Petersburg
25	3	63	42	—	11	—	3	—	Saratov
3	—	19	18	—	—	1	—	—	Simbirsk
4	—	19	15	—	2	1	2	—	Smolensk

Table of Crimes and Accidents in the Russian Empire during

Name of Province or Town.	Number of Fires.		Premature					
	In Towns.	In Villages.	From Fire.	Suicides.	Murders.	Man- slaughter.	From Drowning.	Crushed by Trees, Falls of Earth, &c.
Taurida	13	24	1	10	5	1	8	5
Tambov	5	72	1	4	5	3	26	22
Tver	11	76	2	5	8	—	9	9
Tobolsk	7	16	—	14	9	3	16	3
Tomsk	5	14	1	3	18	—	5	4
Tula	5	57	—	4	4	—	23	5
Kharkov	27	34	3	27	5	2	24	9
Kherson	13	5	—	17	12	1	10	11
Chernigov	26	50	5	13	6	4	6	8
Esthonia	—	2	—	3	—	—	8	—
Yaroslav	9	81	—	3	7	4	18	5
Bessarabia	18	64	—	10	3	4	5	8
Kertch-Enikale	—	—	—	2	4	—	—	2
Odessa	9	—	—	—	—	—	2	1
Taganrog	2	—	—	—	—	—	—	—
Nikolaiev	—	—	—	—	2	—	—	2
Sebastopol	—	—	—	—	1	1	—	—
Cronstadt	—	—	—	2	—	2	5	3
Moscow	25	—	4	6	6	—	2	—
Baku (province of)....	5	20	1	15	23	5	—	6
Tifis	2	3	1	7	9	1	4	8
Stavropol	7	15	1	2	1	—	7	5
Kutais	1	—	—	—	1	—	—	—
District of Cossack } troops	—	1	2	—	—	—	3	2
Total*	632	2,417	126	433	393	129	612	405

* These totals do not correspond in many cases with the items. Such mistakes almost
mistakes must

Note.—This Table apparently embraces a population of about 60 millions.

the Months of January, February, March, and April, 1863—Contd.

Deaths.				Missing.	Children Left at Doors.	Robberies.	Robberies in Churches.	Deaths from Hail Storms.	Name of Province or Town.
From Drunken- ness.	Frozen.	Other Causes of Death.	Dead Bodies Found.						
5	3	24	6	—	1	—	—	—	Taurida
32	4	79	34	1	15	1	2	—	Tambov
30	1	63	47	—	64	3	—	—	Tver
32	—	25	35	—	6	—	—	—	Tobolsk
20	7	31	21	—	1	2	1	—	Tomsk
56	7	53	14	—	4	—	—	—	Tula
7	—	77	37	—	5	2	1	—	Kharkov
4	—	38	26	—	4	—	—	—	Kherson
5	1	50	28	—	1	—	—	—	Chernigov
1	—	6	6	—	3	—	1	—	Esthonia
33	3	44	39	—	39	4	3	1	Yaroslav
—	—	34	31	—	1	2	4	—	Bessarabia
1	—	4	3	1	2	—	—	—	Kertch-Enikale
—	—	19	16	1	13	1	—	—	Odessa
—	—	6	3	—	5	1	1	—	Taganrog
—	—	8	1	—	—	—	—	—	Nikolaiev
3	—	—	—	—	—	—	—	—	Sebastopol
8	1	5	12	1	—	—	—	—	Cronstadt
33	7	79	26	—	3	8	—	—	Moscow
1	3	18	6	1	3	12	—	1	Baku (province of)
—	—	16	4	—	—	2	—	—	Tiflis
2	—	18	3	1	4	—	1	—	Stavropol
—	—	3	—	—	—	—	—	—	Kutais
1	1	4	—	—	—	—	—	—	{ District of Cossack troops
933	125	2,446	1,553	29	387	164	48	3	Total*

always occur in Russian tables. As the *totals* are, however, quoted in an official abstract, the occur in the items.

On the PARIS STREET IMPROVEMENTS, and their Cost. By
W. TITE, M.P., F.R.S., &c.

[Read in Section (F), British Association, at Newcastle-on-Tyne, August, 1863.]

THE improvements that have lately been effected in the streets of Paris are of so very extraordinary a character, and they have given rise to the promulgation of such singular opinions as to their results, that I have been induced to look into the question somewhat closely. I have always held that the making of a new street, in the heart of a city, was an operation that must be attended with a positive loss to the body undertaking it; in some cases amounting to as much as 60 per cent. of the capital employed in it; and I was therefore anxious to discover, if possible the result of our French neighbours' experience in the matter. It is said that they "manage these things better in France, than with ourselves;" and that, in the Rue de Rivoli, for instance, the works of street improvement had been accomplished with profit; it became then a matter of interest to endeavour to discover the facts of the case, and I therefore took measures to ascertain the cost of the new streets from the official reports. My examination has led to a confirmation of my opinion, and to the belief that the improvements of Paris have cost at least the proportion that I have named; and instead of having yielded a profit, the recent alterations have in all cases proved to be a source of very considerable loss.

The great operations in Paris began in the year 1848, by the works which have been undertaken for the purpose of continuing the Palace of the Tuilleries, to the Louvre; which was subsequently extended to the disengagement of the Hotel de Ville, and the continuation of the Rue de Rivoli, to the prolongation of the Rue St. Antoine. This was a very necessary improvement; for the streets which were demolished had, in 1848, been the stronghold of the insurrections that marked the year; and they were so close to the public buildings named, that the latter were always in danger of being seized by the mob, when there was any disturbance. In addition to this strategetical motive, there was the consideration that Paris wanted ventilation in this direction, and that the communication from the east to the west would be immeasurably benefited by the new street; but if this circumstance gave the

Note.—In the original paper the money values were expressed in *francs*, these have been changed into pounds sterling at the rate of 25 frs. = 1*l*.

promise that the benefit of the operation would be great, it also entailed upon the city several necessities, which I shall have occasion to revert to hereafter. In the meantime, the movement was given to pulling down of houses, and rebuilding them in a more magnificent style; the Boulevard Sebastopol was undertaken, the Halles Centrales were begun; the Boulevards St. Germain, de Prince Eugène, des Ecoles, de Malesherbes, de St. Michel, &c., were in turn commenced; the Rue de Rouen, the opening of the new quarter de l'Opera, the remodification of the Chaussée d'Antin and Rue Basse du Rempart, the prolongation of the Boulevard from the Opera to the Théâtre Français, &c.; were all decided upon, and they were all commenced. The State intervened in the various cases, with a subvention that varied in amount from one half to one third of the cost; and it has always proved itself anxious to contribute to the embellishments of the city. It has from time to time authorized the town to contract loans to the amount of 7,200,000*l.* up to the close of the financial year 1861; and has facilitated this employment of public credit in every way that it could; it even would appear from the statement by the Prefect that it had paid, upon the operations then ascertained to have been effected, the total sum of 1,620,000*l.* There was no occasion, however, for the strict account being made up between the city and the state; for the works of the Bois de Boulogne, the Parc de Monceaux and the Bois de Vincennes, had also to be included in the sums that the Crown would have eventually to give credit for; the proceeds of the sale of the waste land, and of the building materials, also were added to the resources which the authorities of Paris could dispose of in the mean time. The works of demolition and re-construction, therefore, have proceeded with a vigour that has passed belief, and the city of Paris has been changed with a rapidity that we, Englishmen, can have no conception of.

There is indeed something that is very remarkable in the steps by which Paris has been brought to its present state, and they do, indeed, savour strongly of magic. The broad straight boulevards, the numerous places and squares provided from distance to distance for the comfort and recreation of the people, the various places formed for their promenade in the Bois de Boulogne, the Parc de Monceaux, and the Bois de Vincennes—all testify in the highest manner to the anxious care with which the Administration provides for the wants of those committed to its charge. In the Prefect's Report, there also appear the accounts of the city of Paris for the repairing, and the decoration of the churches, and the public buildings, that fall to the care of the Municipality; and they are, it must be confessed, maintained in a better state than similar buildings are by the English authorities. But the question arises,

in spite of ourselves—how is all this outlay to be met? M. Ferdinand de Laysterie said, in 1861, that the city of Paris had incurred liabilities, by the decision of the Juries, to the extent of 12,840,000*l.*; and that the liabilities of the city were far from being limited to that sum. The liabilities seem to go on increasing from year to year; the resources do not seem to increase in the same manner, and though the credit of Paris be good, a too frequent recourse to that means of meeting the demands upon it, seems a doubtful course. The reasons why these questions occur so forcibly to my mind are, that I am convinced that every one of the improvements must be a source of outlay to the city, and it cannot go on in this manner adding indefinitely to its obligations; nor can the state continue to augment the public burthens for the sake of the dwellers in Paris. The nature, and extent, of the claims upon Paris for the expense of the improvements will be best judged of by the inspection of the returns; but these it must be observed are but a small part of the obligations of Paris in the matter. Indeed it is hard to discover, in the returns that are submitted to the town council, anything like a clear statement of the cost of any one of these operations; for they spread over so long a time, and they are so complicated in themselves, that it is not easy to arrive at any correct result from their examination. Nevertheless, the results of the operations of the Halles Centrales, the prolongation of the Rue de Rivoli, and the Boulevard Sebastopol on the right bank of the Seine, are already sufficiently known to enable us to reason upon their results with something like certainty.

The Halles Centrales gave rise to an outlay that was in itself purely commercial, and it would be fairer to compare the cost of that operation with the similar one undertaken by the Corporation of London in the removal of the Fleet Market. However, the cost, and the returns, of the Halles Centrales appear in the Prefect's Returns as follows :

<i>Dr.</i>	<i>Halles Centrales.</i>	<i>Cr.</i>	
	£	£	
Sale of old materials	15,569	Land	780,955
„ spare lands.....	118,140	Reconstruction of houses	6,315
Divers products	18,949	Buildings.....	458,561
Properties unsold at 33 yrs. } purchase on 3,523 <i>l.</i> }	116,266	Roads, &c.	21,426
	<hr/>	Square of Innocents, and } Fountain of Nymphs.... }	4,592
	268,922		
Loss on this operation	1,002,927		
	<hr/>		<hr/>
	1,271,849		1,271,849

The returns of the Rue de Rivoli are given somewhat more in detail, because the State has intervened in very different proportions

in certain parts of the work ; thus the accounts of the creditor side appear to be—

	£
1st Operation at the sole expense of the town from the Place du Louvre to the Hotel de Ville, including the opening for the Square of St. Jacques la Boucherie—	
Purchase of land	1,464,234
Making roadway	61,065
Lowering the bridge of Notre Dame.....	57,595
Restoration of the tower of St. Jacques la Boucherie....	33,155
	<hr/>
	1,616,049
2nd Operation, at equal cost of the State and the town—	
Purchase of land	692,651
Making of roadway	4,129
	<hr/>
	696,780
3rd Operation, at two-thirds of the whole cost on account of the State, one-third at that of the town—	
Purchase of land	867,450
Making of roadways	23,665
Levelling the Place du Carrousel	8,398
	<hr/>
	899,513
4th Operation, at the cost of one-third for the State, and two-thirds for the town—	
Purchase of land	1,073,353
Making roadways.....	37,795
Construction of two houses at the corner of Avenue } Victoria.....	22,659
Indemnity or damages, 140 <i>l.</i> added to No. 1	1,133,947
	<hr/>
Total	4,346,289
	<hr/>
The products realized from the sale of the surplus land, &c. were, for the 1st Operation—	
Sale of old materials	45,176
„ surplus lands	224,957
„ divers products	10,476
	<hr/>
	280,609
Properties unsold, 1,733 <i>l.</i> , at 33 years' purchase.....	57,190
	<hr/>
	377,803
For the 2nd Operation—	
Sale of old materials	25,544
„ land	124,137
Divers products	1,154
	<hr/>
	150,835
Properties unsold, 2,252 <i>l.</i> , at 33 years' purchase	74,313
	<hr/>
	225,148

For the 3rd Operation—	£
Sale of old materials	20,476
„ spare land	227,812
Divers products	26,957
	<hr/>
	275,245
Properties unsold, 5,634 <i>l.</i> , at 33 years' purchase	185,921
	<hr/>
	461,166
For the 4th Operation—	
Sale of old materials	36,320
„ spare land	145,539
Divers products	20,583
	<hr/>
	202,442
Properties unsold, 847 <i>l.</i> , at 33 years' purchase	26,768
	<hr/>
	229,210
	<hr/>
Total	1,293,327
	<hr/>

Thus the street has cost the total sum of 4,346,320*l.* nearly, and it has brought in the sum of 1,293,328*l.*; or the total loss upon this operation, supposing it to have been executed at the sole expense of the city, would be about 68·57 per cent.; and it is to be observed, that in order to make the returns as high as possible, I have estimated the whole of the properties unsold *at 33 years' purchase* of the gross rental received from them, without any deduction for the cost of collection, the maintenance in order of the properties, &c. The sum that the State will have to pay will of course depend upon the receipts, after the whole of the property shall have been realized; but if we assume it to be as I have stated, it will be about as follows:—

	£	£	£
For the 2nd Operation	(696,780 — 225,148) ÷ 2 =	235,816	
„ 3rd „	(899,513 — 461,166) ÷ $\frac{2}{3}$ =	292,231	
„ 4th „	(1,133,948 — 229,209) ÷ $\frac{1}{3}$ =	301,579	
		<hr/>	
Total		829,626	
Added to the sum derived as above		1,293,327	
		<hr/>	
Making a total of		2,122,953	
		<hr/>	

This would reduce the cost of the Rue de Rivoli to about 50 per cent. of the gross outlay, leaving out of account the interest of the sums paid in the course of the operation.

The reconstruction of the Boulevard Sebastopol has given rise to very nearly the same result; for we find that it has been driven through the densely peopled parts of the town, between the Rue de Faubourg St. Martin and St. Denis, and so on to the Place du

Clâtelet. There have been reserved great spaces at the station of the Strasbourg Railway, at the Conservatoire des Arts et Métiers, and at the point of junction with the Place du Clâtelet; and throughout the length of the street it has been established of the width that is considered to be necessary for the principal thoroughfares of Paris. This is equivalent to saying that the width is rather exaggerated, and that the aspect of the street is throughout its length, *monumental*. We find its cost to have been as follows:—

	£
Land purchased, one-third on account of the State, } and two-thirds on account of the town.....	2,172,936
Works of roadways ditto	97,958
Buildings	6,596
Rectification of Cysis of St. Leu	6,361
Inauguration of Boulevard.....	2,812
Paid to the Caisse des Travaux	60,000
	<hr/>
	2,346,663
Products—	
Sale of old materials	127,517
Re-sale of land.....	722,451
Divers products	61,278
	<hr/>
	911,246
Properties unsold, 1,331l., on 33 years' purchase.....	43,931
	<hr/>
	955,177
	<hr/>
	<u>1,391,486</u>

The total would make the town a loser by this particular operation of about 60 per cent.; and as the State supports one-third of the loss on it, the city proportion is about 927,154l.; or it must content itself with a loss of about 40 per cent. on the gross outlay for the street, whilst shifting the burthen of the extra 20 per cent. on to the general taxpayers of the country. The accounts for the other works are not yet made up in detail, for the works upon them are now proceeding; but there seems to be every reason to suspect that they will present similar results to the above; for they have been conducted on precisely the same principles, and the same disregard to economical conditions as the streets already examined.

For instance, in the works undertaken of late upon the line of the Boulevard Malesherbes, the width that was thrown out, on each side of the roadway, was made just the width of one house on each side, beyond that which was required for the road itself. Beyond that point the streets, on both sides, are left at their natural level, and they are sometimes as much as 20 or 30 feet above the surface of the boulevard, that is supposed to give access to them. There are the same great spaces left for air, and the enjoyment of the open

streets, as we have seen to be the case with the Boulevard Sebastopol, and the Rue de Rivoli; and the communications are evidently designed for a great city, and for the capital of the arts. They have, however, been designed without reference to the wants of the locality, and they must give rise to still greater expense than has yet been incurred, before they can be made to serve the purposes for which they were intended. In the case of the Rue de Rivoli, there might have been some excuse for the levelling of the side streets; for emphatically that was the leading thoroughfare through Paris, and it serves to place in connection with one another the Tuilleries, the Louvre, and the Hotel de Ville; and the Caserne Napoleon may also claim to be considered as a part of the plan; but what could have been the motive for placing the streets abutting upon the Boulevard Malesherbes at such a disadvantage, as they now are, must always be a mystery. The same thing may be said of the Boulevard de Sebastopol, on the left bank of the Seine, for the levels of the abutting streets have also in many cases to be greatly altered, and the open places near the Palais des Fermes, and the Hotel Clugny, are strangely different from the levels of the great lines of communication. In fact, the principle that seems to have been adopted in designing the works of these Boulevards has been to fix the levels of the two extreme points, and to make the surface of the ground between them on one uniform inclination. This produces great regularity, no doubt, but the sacrifice for the sake of this is enormous; such as, in fact, we can hardly suppose to have been undertaken by a municipality, elected by the general body of the ratepayers.

I alluded in the previous part of this paper to the extraordinary conditions that prevailed in the Rue de Rivoli, that made the operation of driving that street more than usually expensive; and I think the present a good opportunity for recurring to them. In the first place, the houses that were pulled down were densely peopled; they were built in close proximity to one another, like the houses that were in the heart of the city, and in the very centre of business; they were built, of course, upon all the errors of a Mediæval town without regard to hygiene, but with regard to making the most of the surface. The new street was, as was before stated, meant to constitute the main artery of thoroughfare; it was intended to form the line of communication between the various public buildings that it encountered; so that the width of the new street was necessarily very large. There were in its length a number of large open spaces for the disentanglement of the public buildings, such as the Colonnade of the Louvre, the Tower of St. Jacques la Boucherie, the Hotel de Ville, and in front of the Palais Royale; all of which were, in so many words, drawbacks upon the success of the operation, by reason

of the spaces of ground they rendered it necessary to abandon. More than half the ground on one side of the Rue de Rivoli has thus been ceded to the public; and if the city, with even this sacrifice, has been able to achieve the street, at a gross outlay upon the expense, equal to about 70 per cent. (exactly 68·57), it must be considered to have conducted its operations very skilfully, and very well.

I endeavoured some time since to obtain a return from the House of Commons, for the purpose of forming some opinion on the subject of the cost of such works in London, but their replies to my questions were made in the usual style, that is to say, they were contained in a mass of figures so grouped that nothing could be extracted from them. All that I have been enabled to derive from them is, that the new Cannon Street cost a gross sum of 589,470*l.*, or at the rate of 50*l.* per yard forward; the new Victoria Street cost 330,675*l.*, or about 300*l.*, per yard forward; but I have not been able to ascertain the proportion the city authorities got back upon those sums by the sale of the ground rents. My own experience in these matters is, however, very considerable, and it has led me to the belief that, unless there be some very exceptional cases, the operation of converting inhabited house rent into ground rent—which is the real meaning of the operation of pulling down houses and re-building them, on the assumption that they are parts of town improvements—must always result in loss to those undertaking it. When, as in Paris, wide, straight boulevards are substituted for narrow, confined streets; when there are, moreover, great places provided for the recreation of the public, it is not at all astonishing that the expense is at the rate of 70 per cent. on the outlay. The state has come to the assistance of the city in this matter; but it can only be by casting the burthen upon the tax payers of the country generally—a course which may be tolerated in a highly centralized country, like France, where, in fact, Paris is everything, and the rest of the nation nothing in comparison with it—but which would hardly be tolerated in England, where we pride ourselves on making every place pay for its own improvements.

Before quitting the subject, it may be as well to say that the expenses of the city of Paris are defrayed by a set of receipts that usually figure in the budget presented by the Prefect under the name of “*recettes ordinaires*,” a set called the “*recettes extraordinaires*,” the “*recettes supplémentaires*,” and the “*recettes sur fonds spéciaux*.” The *recettes ordinaires* are made up of the—

	£
Centimes communaux	107,724
Octroi	3,090,283
Escort of merchandise	3,275
Fines (in octroi)	7,681
Octroi on gas	50,699
Halles et marchés	178,545
Location of places in markets	86,551
Ditto in markets outside Barrières	16,120
Weighing and measuring	29,625
Voirie	21,620
Waterworks	146,246
Abattoirs	85,855
Entrepôts	16,717
Paid for standing room, &c., cabs, stalls	106,219
Communal properties, rents of	23,653
Expeditions d'actes	5,080
Burials and proceeds of cemeteries	47,837
Exploitation des voiries (working of cesspools, &c.)	20,051
Frais d'éclairage, sweeping markets, contributions of } proprietors to works of streets, &c., &c., legacies ... }	337,782
Drivers' receipts (tax on dogs, &c.)	108,107
	<hr/>
	4,489,670
Tax upon burials omitted	11,802
	<hr/>
Extraordinary receipts of ordinary budget ...	4,501,472
Extraordinary tax on the territories united to Paris	9,340
Produce of sale of property	26,376
Ditto of divers property	15,071
Contributions and payment of State	245,152
	<hr/>
Total of ordinary budget	4,797,411
	<hr/>
Receipts called "extraordinary," "supplementary," and "fonds spéciaux"—	
Proceeds of loan	1,953,008
Sale of land beyond lines of street	154,322
Rents of properties unsold	14,834
Divers products	503
Balance of last year's accounts	} 1,072,209
Interest upon funds at bank	
	<hr/>
Total of extraordinary receipts, &c.	7,992,287
	<hr/>

This would appear to show that the ordinary budget of the city of Paris amounted to about $4\frac{1}{2}$ millions sterling, for which the town, it must be observed, does much that we leave to be done by private companies or by individuals; as, for instance, the abattoirs, cemeteries, waterworks, &c. The latter branch of the service is discharged in a most disgraceful manner; though the fountains play in every street, the house service is neglected, and water is bought

by the pail. It is not my purpose, however, to enter into a comparison of the systems adopted in the two countries, it would require too long a time, and would lead into far too great discussion, touching as the question does on the whole social relations of the population. It may suffice to say that out of the sum of four millions and a half raised yearly, the city of Paris has to pay the interest on the sums borrowed, and the expenses of watching, lighting, paving, sewerage and watering the city; and when we reflect that the revenue is principally made up of personal contributions, we may easily conceive that the cost of raising it must be enormous. The interest upon the funded debts of the city, at present, is about 421,871*l.*, an insignificant sum, perhaps, for the two millions of inhabitants of Paris: but it will begin to tell rapidly upon the productive industry of the locality if it be not watched carefully, and checked in its gradual and steady increase. The credit of the city, as was before said, stands very high, but it will suffice for a few more operations, such as the Boulevard Malesherbes, to compromise it very severely.

I may be allowed to say that the *comptes généraux* presented by the prefect to the town council are models of public accounts. They are clear and distinct—difficult of course to understand at first, like all such documents; but they contain all the elements for an analysis of the separate accounts, such as I have endeavoured to lay before you. I could not have obtained these documents without the kind co-operation of his Excellency Lord Cowley, who facilitated my inquiries by every means in his power, and to whom I tender my sincerest acknowledgments. The Prefect of the Seine, Baron Haussman, I may also add, displayed the greatest politeness in answering my questions and obtaining for me any document I required.

On the DECREASE of the AGRICULTURAL POPULATION of ENGLAND and WALES, 1851-61. By FREDERICK PURDY, Principal of the Statistical Department, Poor Law Board, and one of the Honorary Secretaries of the Statistical Society.

[Read before Section (F) of the British Association, at Newcastle-upon-Tyne, August, 1863.]

§ 1. IN the prosperity of latter years the cry of "Agricultural Distress" has been forgotten; and it is, I believe, generally admitted that the business of the English farmer has seldom been more successful or steadier than during the period which has elapsed since the repeal of the corn laws. The annual value of agricultural land has appreciably risen. In 1843 the assessment upon land and tithes, under Schedule A, to the property tax, was 42,127,419*l.*; in 1860 it was 42,994,947*l.*, or an increase in seventeen years of 867,528*l.*, that is, 2.1 per cent. In 1861-62 the Commissioners of Inland Revenue made a fresh assessment under Schedules A and B. According to this it would appear that the valuation under Schedule B (farmers' profits), was 1,717,000*l.* higher than in 1857; but the Commissioners warn the public that the increase shown by the new assessment "must not be taken as the addition made to the value of property" in the interval.* Some part of it is, no doubt, due to a stricter assessment.

§ 2. But the last census has shown that it is only among the agricultural districts of the kingdom, we can find any counties that have failed to maintain an increased population. Cambridgeshire, Norfolk, Suffolk, Wiltshire, Rutland, Anglesey, and Montgomeryshire, all exhibit an absolute decrease of population in a greater or lesser degree. In 1861 there were in England and Wales 10,983,558 persons aged 20 years and upwards; of whom 1,605,503 are stated by the Commissioners of the Census to have been engaged in agriculture; that is, 14.6 per cent. of the total adults. Under agriculture, the Commissioners on the present occasion class (1) persons engaged in agriculture; (2) in woods; (3) in gardens; and (4) about animals. The last subclass includes 74,203 adults.

§ 3. To show briefly the rates of progress in the numbers of the people in the agricultural districts, it will be necessary to divide the

* "Seventh Report on the Inland Revenue."

Note.—The Census of 1861, in respect of the class ascribed to "Agriculture," differs from that of 1851 by including persons "engaged about animals." Of 1,605,503 persons aged 20 and upwards, who in 1861 were classed as occupied in agriculture, 74,203 were "engaged about animals."

kingdom into three sections, according to the proportion of persons who were occupied in agriculture, at the date of the last census,* in each county :—

- 1. The *most agricultural* counties, having upwards of 20 per cent. of the adult population engaged in agriculture.
- 2. The *medium agricultural* counties, having less than 20 but more than 10 per cent. engaged in agriculture.
- 3. The *lowest agricultural* counties, having less than 10 per cent. engaged in agriculture.

Census of 1861.

24 counties of HIGHEST rank in respect of the proportion of the adults occupied in agriculture :—

All above 20 per cent. (Range 20·5 to 33·9 per cent.)

Sussex	20·5	Wilts.....	29·3
Berks	25·6	Dorset	23·9
Herts	25·1	Somerset	21·7
Bucks	25·4	Hereford	31·4
Oxon.....	27·1	Salop.....	25·8
Northampton	23·2	Rutland	33·9
Huntingdon	30·8	Lincoln	32·3
Beds	25·0	North York	30·4
Cambridge	31·6	Cumberland	23·1
Essex	25·3	Westmorland	30·8
Suffolk	28·2	South Wales.....	20·8
Norfolk	26·5	North „	27·7

16 counties of INTERMEDIATE rank in respect of the proportion of the adults occupied in agriculture :—

All over 10, but none exceeding 20 per cent. (Range 10·2 to 19·4 per cent.)

Surrey (<i>extra metropolitan</i>) ...	16·2	Warwick	10·2
Kent („) ...	18·3	Leicester	19·1
Southampton	14·7	Notts.....	15·3
Middlesex (<i>extra metropolitan</i>)	13·1	Derby	14·8
Devon	19·4	Chester.....	15·4
Cornwall	18·8	East York.....	18·6
Gloucester	15·0	Northumberland	13·6
Worcester.....	15·5	Monmouth	13·1

5 counties, counting the metropolis as one, of LOWEST rank in respect of the proportion of the adults occupied in agriculture :—

All under 10 per cent. (Range 1·6 to 9·8 per cent.)

The Metropolis	1·6	Lancashire	6·3
Staffordshire	9·4	West York	9·8
Durham	7·5		

* Vol. iii, p. 123, “General Report on the English Census.”

§ 4. By taking the population of each section at the four last enumerations, the following table is obtained :—

TABLE A.—*Population of the Counties in Three Sections in 1831-61*

Sections.	Rank as regards Agriculture.	Population.			
		1831.	1841.	1851.	1861.
24 counties	Highest	4,999,563	5,454,528	5,839,689	6,092,712
16 „	Intermediate	4,211,234	4,781,170	5,276,108	5,862,477
5 „	Lowest	4,686,000	5,678,450	6,811,812	8,111,028

In the thirty years which elapsed between 1831 and 1861,—

	Increased in Population.	
The highest counties	1,093,156	or 21·9 per cent.
„ intermediate counties	1,651,243	„ 39·2 „
„ lowest counties.....	3,425,028	„ 73·1 „

It is seen by Table A, that in 1831 the population was rather equally distributed between the three sections; but that, in 1861, in consequence of the diverse rate of increase during the three last decades, this equality was destroyed. Thus the population was in *millions*, in—

	1831.	1861.
The highest counties.....	5·0	6·1
„ intermediate counties ...	4·2	5·9
„ lowest counties	4·7	8·1

Tracing the rate of increase through each decade, and noting the results, the next table is constructed.

TABLE B.—*Decennial Increase in the Population of the Counties.*

Sections.	Rank as regards Agriculture.	Decennial Increase per Cent. in Population.		
		1831-41.	1841-51.	1851-61.
24 counties	Highest	9·1	7·1	4·3
16 „	Intermediate	13·5	10·4	11·1
5 „	Lowest.....	21·2	20·0	19·1

Here each section shows a decline in the decennial rate of incre-

ment; but the decline is greatest in the highest counties and least in the lowest. The intermediate counties, with a large decline between the first two decades, indicate a tendency to rise in the last.

§ 5. The more immediate object of this paper, however, is to investigate the numerical changes which, during the last decennium, have taken place in the adult population actually employed in agriculture, and in the two kindred pursuits of arboriculture and horticulture. In 1851 the numbers so employed were 1,576,080; but, in 1861, the numbers, exclusive of the persons "engaged about animals," as this subclass was not placed under agriculture in 1851, were 1,531,275. This shows that the very large decrease of 44,790 persons, or 2·84 per cent., had taken place in the ten years. *Eight* divisions of the kingdom show a decrease, and *three* an increase. In the eight divisions there is an aggregate decrease in the adults employed in agriculture of 54,434; but, on the other hand, three divisions show an increase of 9,644; the net result is therefore a diminution of 44,790 persons, as already stated. (See Table I, Appendix.) The actual and the percentage variations for each division, will be found in the next statement:—

TABLE C.—*Number of Adults engaged in Agriculture in each Division—1851 and 1861.*

Divisions.	Number of Persons Aged 20 and upwards, Engaged in Agriculture (exclusive of the Number Engaged about Animals).		Difference between 1861 and 1851.		Difference per Cent.	
	1851.	1861.	More.	Less.	More.	Less.
I. The Metropolis	15,837	15,687	—	150	—	0·95
II. South-Eastern.....	184,601	178,146	—	6,455	—	3·50
III. South Midland	167,627	163,547	—	4,080	—	2·43
IV. Eastern	160,249	155,818	—	4,431	—	2·77
V. South-Western	227,554	207,173	—	20,381	—	8·96
VI. West Midland	179,363	179,800	437	—	0·24	—
VII. North Midland	142,389	144,710	2,321	—	1·63	—
VIII. North-Western	112,184	119,070	6,886	—	6·14	—
IX. York	137,681	136,909	—	772	—	0·56
X. Northern.....	83,822	78,942	—	4,880	—	5·82
XI. Welsh	164,773	151,488	—	13,285	—	8·06
England and Wales....	1,576,080	1,531,290	—	44,790	—	2·84

The South-Western division, that is, Wilts, Dorset, Devon, Cornwall, and Somerset, lost 20,381, or 8·96 per cent.; and Wales 13,285, or 8·06 per cent. It is remarkable that the North-Western division, which consists of the counties of Lancaster and Chester, and which

contains our largest manufacturing population, shows the greatest increase of any division in the number of adults assigned to agriculture. In 1861 there was an increase of 6,886, or 6·14 per cent.

§ 6. The relative proportions of the adult population engaged in agriculture in 1851 and in 1861, will be found in the next table.

TABLE D.—*Ratio of Adults engaged in Agriculture to the total Adult Population in 1851 and in 1861.*

Divisions.	Number of Persons Aged 20 and upwards, Engaged in Agriculture (exclusive of the Number Engaged about Animals).		Ratio per Cent. on the Total Population Aged 20 and upwards.		Decrease in the Ratio in 1861, as compared with 1851.
	1851.	1861.	1851.	1861.	
I. The Metropolis	15,838	15,687	1·1	1·0	0·1
II. South-Eastern.....	184,601	178,146	20·8	17·4	3·4
III. South Midland	167,627	163,547	25·4	23·5	2·1
IV. Eastern	160,249	155,818	26·5	25·2	1·3
V. South-Western	227,554	207,173	23·3	20·7	2·6
VI. West Midland	179,363	179,800	15·5	13·7	1·8
VII. North Midland	142,389	144,710	21·7	20·7	1·0
VIII. North-Western	112,184	119,070	8·3	7·4	0·9
IX. York	137,681	136,909	14·3	12·5	1·8
X. Northern	83,822	78,942	16·1	12·9	3·2
XI. Welsh	164,773	151,488	25·7	21·4	4·3
England and Wales....	1,576,081	1,531,290	16·1	13·9	2·2

In the first year 16·1 per cent. of the adult population of England and Wales was engaged in agriculture; but in 1861 the ratio had fallen to 13·9 per cent., which is equal to a decrease of 2·2 per cent. In four of the divisions, the fall in the relative proportion has exceeded the average decrease. In Monmouthshire and Wales, it has fallen from 25·7 to 21·4, a decrease of 4·3 per cent.; in the south-eastern counties from 20·8 to 17·4, a decrease of 3·4 per cent.; in the northern counties from 16·1 to 12·9, a decrease of 3·2 per cent.; and in the south-western counties from 23·3 to 20·7, a decrease of 2·6 per cent.

§ 7. The relative position, agriculturally, of each division at the Census of 1851 and at that of 1861, is shown by Table E:—

TABLE E.— *Proportion of Persons Aged 20 and upwards, Engaged in Agriculture in each Division of the Kingdom, with the Relative Position of each Division.*

Divisions.	1851. Agricultural Ratio.		1861. Agricultural Ratio.	
	Relative Position.	Per Cent.	Relative Position.	Per Cent.
Eastern	1	26·5	1	25·2
Welsh	2	25·7	3	21·4
South Midland	3	25·4	2	23·5
South-Western	4	23·3	4	20·7
North Midland	5	21·7	5	20·7
South-Eastern	6	20·8	6	17·4
Northern	7	16·1	8	12·9
West Midland	8	15·5	7	13·7
York	9	14·3	9	12·5
North-Western	10	8·3	10	7·4
The Metropolis	11	1·1	11	1·0

Here it is seen that seven of the divisions keep the same rank in 1861 which they occupied in 1851; and that four change positions. The Welsh division sinks one step, and the West Midland rises to its place; the Northern sinks one step, and the West Midland occupies its rank, and so rises one degree.

§ 8. There are seventeen counties, counting Wales as two, which have experienced an absolute decrease of their adult agricultural population. For the purpose of the next table, only those counties have been selected which have decreased 1,000 and upwards.

TABLE F.— *Decrease in 1861 as compared with 1851, in the Number of Adults Engaged in Agriculture in the undernamed Registration Counties.*

Registration Counties.	Decrease.	
	Number.	Per Cent.
II. SOUTH-EASTERN—		
Sussex	2,698	6·5
Southampton	3,412	8·8
Berks.....	1,158	4·0
III. SOUTH MIDLAND—		
Hertford	1,095	4·6
Bucks	1,048	5·2

TABLE F.—*Decrease of Adults Engaged in Agriculture—Contd.*

Registration Counties.	Decrease.	
	Number.	Per Cent.
IV. EASTERN—		
Suffolk	3,306	6·4
V. SOUTH-WESTERN—		
Wilts	2,837	7·3
Dorset	1,343	5·6
Devon	9,475	13·3
Cornwall	3,917	10·5
Somerset	2,809	5·0
VI. WEST MIDLAND—		
Gloucester	1,166	3·2
X. NORTHERN—		
Northumberland	1,265	5·1
Cumberland	2,099	7·7
XI. WELSH—		
Monmouth	1,089	7·6
South Wales.....	4,530	5·6
North „	7,666	11·0

It will be seen by the last table that four counties have decreased 25,588; these are Devon, 9,475, or 13·3 per cent.; Cornwall, 3,917, or 10·5 per cent.; South Wales, 4,530, or 5·6 per cent., and North Wales, 7,666, or 11·0 per cent. It will, moreover, be found that two counties exhibit a decrease in the agricultural population as well as a decrease in the population generally; and nine counties which show an increase in the population generally; with a very marked decrease in that part of it which is agricultural. The particulars of the first are set out in Table G, and of the second in Table H.

TABLE G.—*Two Counties that have Decreased both in the Number of Adults Occupied in Agriculture, and in the Number of the Inhabitants at all Ages between 1861 and 1851.*

Registration Counties.	Decrease. Number of Adults Engaged in Agriculture.	Decrease. Number of the Population at all Ages.
Wilts	2,837	4,904
Suffolk.....	3,306	747

TABLE H.—*Nine Counties that have Decreased in the Number of Adults Occupied in Agriculture, but which INCREASED in the Number of the Inhabitants at all Ages between 1861 and 1851.*

Registration Counties.	Decrease in Number of Adults Engaged in Agriculture.	Increase in Number of the Population at all Ages.
Devon	9,475	20,074
North Wales	7,666	14,024
South „	4,530	92,266
Cornwall	3,917	11,211
Hants	3,412	54,608
Somerset	2,809	1,043
Sussex	2,698	27,232
Cumberland	2,099	9,784
Northumberland	1,265	39,488

§ 9. There are eleven counties, however, which have increased in their agricultural population. These are Kent, Surrey, Rutland, West and East York slightly; and Salop, Worcester, Leicester, Lincoln, Chester, and Lancashire more markedly; the latter are shown in the next table :—

TABLE I.—*Six Counties that have Increased in the Number of Adults Occupied in Agriculture between 1861 and 1851.*

Registration Counties.	Increase in the Number of Adults Employed in Agriculture.	Increase per Cent.
Salop	1,226	3·5
Worcester	1,281	5·7
Leicester	1,371	6·0
Lincoln	2,139	3·3
Chester	1,550	4·2
Lancaster	5,336	7·1

§ 10. It may be thought remarkable that our great manufacturing county of Lancaster should exhibit the largest increase in the kingdom, in the number and proportion of her agricultural population. In ten years, 1851-61, the increase was 7·1 per cent., or 5,336 adults. Lancashire is so constantly before our minds as a manufacturing and mining district, that we are apt to lose sight of her agricultural industry; and few persons, unfamiliar with statistical inquiries, are aware that this county employs more persons in agriculture than any other in England. In 1861 the numbers so employed in Lancashire were 80,822 (adults); the West Riding of York, which in this respect ranks next, only employs 77,168; and the purely agricultural county of Lincoln but 67,357. There are some circumstances connected with the agri-

cultural status of the first and last named counties which merit record; and, to do this usefully, it is desirable to discriminate for Lancashire and Lincolnshire, those who are employed in agriculture from those occupied with arboriculture and horticulture. This is effected in the succeeding table:—

TABLE J.—*The Number of PERSONS Aged 20 and upwards in 1861, who were Occupied in—*

	Lincoln.			Lancaster.		
	Persons.	Males.	Females.	Persons.	Males.	Females.
Agriculture.....	65,849	53,645	12,204	76,496	55,281	21,215
Arboriculture.....	187	187	—	166	165	1
Horticulture	1,321	1,298	23	4,160	4,122	38

Here it is found that while Lancashire employs 76,496 of her adult population in “agriculture” properly so called, Lincolnshire employs 65,849, or nearly 11,000 less hands.

Now, when we turn to the assessments of the farmers’ profits under Schedule B for the year 1859-60, the latest date returned for separate counties, we find that the sum in Lincolnshire was more than *one million* over that of Lancashire, though the latter employed nearly 11,000 more adults in agriculture.

The exact figures of the valuation are these, viz.:—

	Gross Annual Income Assessed under Schedule B.
	£
Lincolnshire	2,647,022
Lancashire	1,604,586
Difference as against Lancashire....	<u>1,042,436</u>

There is not the slightest reason to suspect that the valuations for the two counties are made on different principles. The value *assessed* in both cases is the full value, whether it be taxable or not. The value of the property under Schedule B, which in the same year was taxable and taxed, or, in the language of the Inland Revenue Department, the “value charged,” was for—

	£
Lincolnshire	1,805,702
Lancashire	673,224

These figures indicate that a far greater proportion of the land in Lancashire is held by small farmers than in Lincolnshire; but if there were any doubt upon the subject, the census of farm holdings in 1851 would remove it:—

	Number of Farms.	Number of Farms over 100 Acres.	Ratio to Total.
Lincolnshire	10,970	2,903	26·5
Lancashire	15,365	565	3·7

In Lincolnshire more than *one-fourth* of the farms exceed 100 acres each ; but in Lancashire less than *one-twenty-fifth* come up to that size. Not only should we here look to the difference between the Lincolnshire and Lancashire farmer, and the capital which they can respectively employ, for some explanation of the discrepancy between the number of hands occupied and value of the results, but also to the character of the cultivation in each county ; how far one partakes more of a pastoral character than the other. England gathers no agricultural statistics, and consequently a statistical solution of the latter point is impracticable at present.

Dividing the farmer's profits between all the adults ascribed to agriculture in each county,* we find, as a fact, that—

- The large farms of Lincolnshire yield 40*l.* per head ; and,
- The small farms of Lancashire yield 2*l.* per head.

§ 11. It is believed that a considerable proportion of the decrease of the labouring population in agricultural districts may be ascribed to the conversion of arable into pasture land. Had England adopted a system for collecting agricultural statistics, such as Ireland during the time here under review has possessed, all conjecture upon the question would have been removed. We have, however, one piece of statistical evidence upon the subject:—In 1851, the shepherds (outdoor) were returned in the census as 12,517, but in 1861 this class of farm servants had more than doubled, it was then 25,559. There are also one or two indications of increasing agricultural enterprise in other directions ; thus, in 1851, no person is separately enumerated as “an agricultural engine and machine worker ;” but in 1861 there are 1,205 so returned. In 1851 there were 55 “agricultural implement proprietors ;” in 1861 this occupation is ascribed to 236 persons. “Land drainage service (not in towns),” in 1851, employed 11 persons ; in 1861 the same calling is recorded of 1,761. “Land proprietors” and “farmers and graziers” have both increased, the former by 451, the latter by 304, in the ten years. (Table II, Appendix.) Whatever may be the causes of that decline in the population of certain rural districts which has been discussed in this paper, there is no reason for supposing that agriculture in this country has not fairly participated, for some years past, in the general prosperity of the kingdom.

* See Table J. The numbers there stated against “Agriculture,” and the sums assessed under Schedule B, are respectively divisor and dividend here.

APPENDIX.

I.—*Number of Persons AGED 20 YEARS AND UPWARDS, engaged in Agriculture in England and Wales, according to the Census of 1851 and that of 1861.*

Divisions and Union-Counties.	Number of Persons Aged 20 and upwards, engaged in Agriculture in†		Difference between 1861 and 1851.		Difference per Cent.	
	1851.	1861.	More.	Less.	More.	Less.
I. THE METROPOLIS.						
*1. Middlesex (<i>part of</i>)	9,118	8,961	—	157	—	1·72
*2. Surrey ,,	4,566	4,206	—	360	—	7·88
*3. Kent ,,	2,153	2,520	367	—	17·05	—
Totals	15,837	15,687	—	150	—	0·95
II. SOUTH-EASTERN.						
*2. Surrey (<i>part of</i>)	23,446	24,117	671	—	2·86	—
*3. Kent ,, 	52,391	52,533	142	—	0·27	—
4. Sussex	41,223	38,525	—	2,698	—	6·54
5. Southampton	38,739	35,327	—	3,412	—	8·81
6. Berks	28,802	27,644	—	1,158	—	4·02
Totals	184,601	178,146	—	6,455	—	3·50
III. SOUTH-MIDLAND.						
*1. Middlesex (<i>part of</i>)	12,745	12,656	—	89	—	0·70
7. Hertford	23,890	22,795	—	1,095	—	4·58
8. Buckingham	20,370	19,322	—	1,048	—	5·14
9. Oxford	24,655	24,348	—	307	—	1·25
10. Northampton	28,138	27,891	—	247	—	0·88
11. Huntingdon	9,633	9,113	—	520	—	5·40
12. Bedford	17,998	17,744	—	254	—	1·41
13. Cambridge	30,198	29,678	—	520	—	1·72
Totals	167,627	163,547	—	4,080	—	2·43
IV. EASTERN.						
14. Essex	49,494	48,684	—	810	—	1·64
15. Suffolk	51,564	48,258	—	3,306	—	6·41
16. Norfolk	59,191	58,876	—	315	—	0·53
Totals	160,249	155,818	—	4,431	—	2·77
V. SOUTH-WESTERN.						
17. Wilts	38,931	36,094	—	2,837	—	7·29
18. Dorset	23,958	22,615	—	1,343	—	5·61
19. Devon	70,816	61,341	—	9,475	—	13·38
20. Cornwall	37,479	33,562	—	3,917	—	10·45
21. Somerset	56,370	53,561	—	2,809	—	4·98
Totals	227,554	207,173	—	20,381	—	8·96

† See note at p. 388.

I.—Number of Persons Engaged in Agriculture—Contd.

Divisions and Union-Counties.	Number of Persons Aged 20 and upwards, engaged in Agriculture in		Difference between 1861 and 1851.		Difference per Cent.	
	1851.	1861.	More.	Less.	More.	Less.
VI. WEST MIDLAND.						
22. Gloucester	36,690	35,524	—	1,166	—	3·18
23. Hereford	18,697	18,522	—	175	—	0·94
24. Salop	34,934	36,160	1,226	—	3·51	—
25. Stafford	36,638	35,951	—	687	—	1·88
26. Worcester	22,690	23,971	1,281	—	5·65	—
27. Warwick	29,714	29,672	—	42	—	0·14
Totals	179,363	179,800	437	—	0·24	—
VII. NORTH MIDLAND.						
28. Leicester	22,841	24,212	1,371	—	6·00	—
29. Rutland	4,087	4,163	76	—	1·86	—
30. Lincoln	65,218	67,357	2,139	—	3·28	—
31. Nottingham	26,817	25,956	—	861	—	3·21
32. Derby	23,426	23,022	—	404	—	1·72
Totals	142,389	144,710	2,321	—	1·63	—
VIII. NORTH-WESTERN.						
33. Chester	36,698	38,248	1,550	—	4·22	—
34. Lancaster	75,486	80,822	5,336	—	7·07	—
Totals	112,184	119,070	6,886	—	6·14	—
IX. YORK DIVISION.						
35. West Riding	77,139	77,168	29	—	0·04	—
36. East „	26,449	26,581	132	—	0·50	—
37. North „	34,093	33,160	—	933	—	2·74
Totals	137,681	136,909	—	772	—	0·56
X. NORTHERN.						
38. Durham	20,854	19,858	—	996	—	4·78
39. Northumberland	24,924	23,659	—	1,265	—	5·08
40. Cumberland	27,403	25,304	—	2,099	—	7·66
41. Westmorland	10,641	10,121	—	520	—	4·89
Totals	83,822	78,942	—	4,880	—	5·82
XI. WELSH.						
42. Monmouth	14,405	13,316	—	1,089	—	7·56
43. South Wales	80,679	76,149	—	4,530	—	5·61
44. North „	69,689	62,023	—	7,666	—	11·00
Totals	164,773	151,488	—	13,285	—	8·06
Totals of England and Wales	1,576,080	1,531,290	—	44,790	—	2·84

II.—*Number of Persons, AT ALL AGES, engaged in Agriculture in England and Wales, enumerated at the Census of 1851 and of 1861.*

Special Occupations.	Persons.		Difference.		Difference per Cent.	
	1851.	1861.	More.	Less.	More.	Less.
Land proprietor	30,315	30,766	451	—	1·5	—
Farmer, grazier	249,431	249,735	304	—	0·1	—
Farmer's, grazier's wife	164,618	163,765	—	853	—	0·5
Farmer's son, grandson, } brother, nephew	111,704	92,321	—	19,383	—	17·4
Farmer's daughter, grand- } daughter, sister, niece }	105,147	83,830	—	21,317	—	20·3
Farm bailiff	10,561	15,698	5,137	—	48·6	—
Agricultural labourer } (out-door)	952,997	958,265	5,268	—	0·6	—
Shepherd (out-door)	12,517	25,559	13,042	—	104·2	—
Farm servant (in-door)	288,272	204,962	—	83,310	—	28·9
Land surveyor, land estate } agent	3,064	4,702	1,638	—	53·5	—
Agricultural student	104	490	386	—	371·2	—
Hop grower	30	33	3	—	10·0	—
Willow rod grower, dealer ..	60	35	—	25	—	41·7
Teazle grower, merchant	85	81	—	4	—	4·7
Agricultural implement } proprietor	55	236	181	—	329·1	—
Agricultural engine and } machine worker	—	1,205	1,205	—	—	—
Land drainage service } (not in towns)	11	1,761	1,750	—	15909·1	—
Colonial planter, farmer	16	91	75	—	468·8	—
Others connected with } agriculture	128	117	—	11	—	8·6
Woodman, wood gatherer....	7,772	8,916	1,144	—	14·7	—
Others connected with } arboriculture	236	10	—	226	—	95·8
Gardener (not domestic } servant)	71,805	78,533	6,728	—	9·4	—
Nurseryman, woman } (horticulturist)	2,383	2,917	534	—	22·4	—
Watercress grower.....	39	55	16	—	41·0	—
Others connected with } horticulture	97	27	—	70	—	72·2
Total*	2,011,447	1,924,110	—	87,337	—	4·3

* The total of Order 8 of the "Agricultural Class;" Order 9, "Persons engaged about "Animals" being excluded, see "Census of Occupations, 1861."

STATISTICS of METROPOLITAN and PROVINCIAL GENERAL
HOSPITALS for 1862.

THE publication of the statistics of the General Hospitals of London for the year 1862 has been delayed by causes to which it is not necessary here to advert.

It will be seen that the information embodied in the following tables is not complete, inasmuch as no returns have been received from the Middlesex and University College Hospitals. In some instances the returns have been received in a somewhat imperfect state.

A new table, showing the deaths and rates of mortality in St. George's Hospital in the *thirty-six years* from 1827 to 1862 inclusive, is added to the present statement; and it may be well to state that similar returns from other London hospitals, if forwarded to this Society, will be included in future reports.

Abstracts of the returns from twelve county hospitals and hospitals of the large provincial cities are also added to this report. These summaries will be found to contain valuable information, especially when compared with the statistics of the metropolitan hospitals.

The first report issued by this Society, with an account of the circumstances under which it was prepared and published, will be found in the *Journal* of this Society for September, 1862.

Note.—The following letter has been received from St. Thomas's Hospital:—

“ To the Secretary of the Statistical Society.

“ Sir,—In forwarding the accompanying statistics on behalf of myself and the
“ Surgical Registrar, Mr. Croft, I would beg your attention to the peculiar
“ circumstances under which St. Thomas's Hospital has been placed during the
“ past year; that the old hospital was closed in July, and that for several weeks
“ previously the number of in-patients gradually dwindled from 460 down to about
“ 28, in consequence of no fresh patients having been admitted; that the new
“ hospital here was opened towards the end of September, at first with very few
“ patients, the number soon increasing to about 190. It is evident, from the great
“ discrepancies between these numbers, that the average number taken for the
“ whole year would by no means represent the real state of things; and on this
“ account we have thought it advisable to refrain from furnishing statements as to
“ the average number resident daily and the mean residence. It will also be
“ evident that the fluctuating numbers resident would also have some effect on the
“ other portions of the statistics.

“ I am, Sir,

“ Your most obedient Servant,

“ J. WALE HICKS.”

“ *St. Thomas's Hospital,*

“ *30th June, 1863.*”

TABLE I.—General Results. (No distinction

Hospital.	Remaining 1st January, 1862.	Admitted during the Year.	Total.	Discharged Well or Convalescent.	Relieved.
	No.	No.	No.	No.	No.
St. Bartholomew's	522	5,389	5,911	4,371	—
Guy's	483	4,888	5,371	2,443	1,525
St. Thomas's	452	2,324	2,776	1,404	837
London	355	4,164	4,519	1,784	1,762
St. George's	314	3,702	4,016	1,599	1,726
Middlesex	—	—	—	—	—
St. Mary's	136	1,704	1,840	1,046	427
Westminster	149	1,820	1,969	1,061	544
King's College	126	1,614	1,740	916	404
University	—	—	—	—	—
Royal Free	72	1,254	1,326	817	283
Charing Cross	103	950	1,053	887	—
Metropolitan Free	14	107	121	73	33
Great Northern	10	111	121	—	—
Totals (so far as returned).....	2,736	28,027	30,763	16,401	7,541

TABLE II.—Medical and Surgical

Hospital.	Medical Wards.					
	Remaining 1st January, 1862.	Admitted during the Year.	Total.	Discharged.	Died.	Remaining 1st January, 1863.
	No.	No.	No.	No.	No.	No.
St. Bartholomew's ...	211	2,052	2,263	1,679	394	190
Guy's	204	2,000	2,204	1,723	292	189
St. Thomas's	193	1,155	1,348	1,121	144	83
London	100	1,300	1,400	1,156	135	109
St. George's	118	1,652	1,770	1,465	193	112
Middlesex	—	—	—	—	—	—
St. Mary's	61	904	965	805	95	65
Westminster	—	—	—	—	—	—
King's College	60	906	966	769	122	75
University	—	—	—	—	—	—
Royal Free	—	—	—	—	—	—
Charing Cross	38	419	457	376	47	34
Metropolitan Free ...	7	42	49	44	3	2
Great Northern	—	—	—	—	—	—
Totals (so far as returned) }	992	10,430	11,422	9,138	1,425	859

of Sex; nor of Medical or Surgical Cases.)

Unrelieved.	Discharged for Special Reasons.	Died.	Remaining 1st January, 1863.	Brought in Dead.	Hospital.
No.	No.	No.	No.	No.	
236	218	605	481	19	St. Bartholomew's
346	87	468	502	6	Guy's
17	97	226	195	6	St. Thomas's
35	253	318	367	—	London
17	68	315	291	11	St. George's
—	—	—	—	—	Middlesex
21	50	164	132	11	St. Mary's
—	9	188	167	—	Westminster
80	47	163	130	12	King's College
—	—	—	—	—	University
43	9	91	83	—	Royal Free
—	—	83	83	—	Charing Cross
2	—	6	7	—	Metropolitan Free
—	1	5	2	—	Great Northern
797	839	2,632	2,440	65	{ Totals (so far as returned)

Cases, without distinction of Sex.

Surgical Wards.						Hospital.
Remaining 1st January, 1862.	Admitted during the Year.	Total.	Discharged.	Died.	Remaining 1st January, 1863.	
No.	No.	No.	No.	No.	No.	
311	3,337	3,648	3,146	211	291	St. Bartholomew's
279	2,888	3,167	2,678	176	313	Guy's
259	1,175	1,434	1,234	88	112	St. Thomas's
255	2,864	3,119	2,678	183	258	London
196	2,061	2,257	1,945	133	179	St. George's
—	—	—	—	—	—	Middlesex
75	811	886	750	69	67	St. Mary's
—	—	—	—	—	—	Westminster
66	708	774	678	41	55	King's College
—	—	—	—	—	—	University
—	—	—	—	—	—	Royal Free
65	531	596	511	36	49	Charing Cross
7	65	72	64	3	5	Metropolitan Free
—	—	—	—	—	—	Great Northern
1,513	14,440	15,953	13,684	940	1,329	{ Totals (so far as returned)

TABLE III.—Average Number of Patients and Mean Residence.

Hospital.	All Cases.				Medical Cases.				Surgical Cases.			
	Average Number Resident.			Mean Residence.	Average Number Resident.			Mean Residence.	Average Number Resident.			Mean Residence.
	Males.	Females.	Total.		Males.	Females.	Total.		Males.	Females.	Total.	
St. Bartholomew's	No.	No.	No.	Days.	No.	No.	No.	Days.	No.	No.	No.	Days.
Guy's	283	211	494	33	108	97	205	33	175	114	289	33
St. Thomas's	—	—	—	—	—	—	—	—	—	—	—	—
London	233	112	345	30	55	44	99	29	177	69	246	31
St. George's	168	139	307	27	57	58	115	24	111	81	192	30
Middlesex	—	—	—	—	—	—	—	—	—	—	—	—
St. Mary's	76	64	140	30	29	36	65	26	47	28	75	34
Westminster	—	—	—	—	—	—	—	—	—	—	—	—
King's College	—	—	135	31	—	—	—	—	—	—	—	—
University	—	—	—	—	—	—	—	—	—	—	—	—
Royal Free	—	—	—	—	—	—	—	—	—	—	—	—
Charing Cross	—	—	93	32	—	—	—	—	—	—	—	—
Metropolitan Free	5	5	10	30	1½	1½	3	23	3½	3½	7	37
Great Northern ..	—	—	—	—	—	—	—	—	—	—	—	—
Totals (so far as returned) }	765	531	2,068	Average 32	250½	236½	487	Average 27	513½	295½	809	Average 36

TABLE IV.—Rate of Mortality.

Hospital.	All Cases.			Medical Cases.			Surgical Cases.		
	Males.	Females.	Males and Females.	Males.	Females.	Males and Females.	Males.	Females.	Males and Females.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
St. Bartholomew's	—	—	10·2	—	—	17·4	—	—	5·7
Guy's	10·1	8·8	9·6	15·1	13·	14·4	6·6	5·4	6·1
St. Thomas's	10·0	7·2	8·9	14·0	7·9	11·3	6·7	6·4	6·6
London	7·8	7·3	7·6	11·	8·0	10·4	6·2	6·7	6·4
St. George's	10·5	6·5	8·7	14·7	8·5	11·6	7·7	4·4	6·4
Middlesex	—	—	—	—	—	—	—	—	—
St. Mary's	9·9	7·3	8·8	12·8	7·2	9·9	7·7	7·9	7·8
Westminster	—	—	—	—	—	—	—	—	—
King's College	10·8	7·6	9·8	16·0	9·0	12·5	6·0	4·0	5·3
University	—	—	—	—	—	—	—	—	—
Royal Free	—	—	—	—	—	—	—	—	—
Charing Cross	—	—	—	—	—	—	—	—	—
Metropolitan Free	6·5	3·5	5·0	8·3	4·0	6·0	2·5	6·0	4·2
Great Northern ..	—	—	—	—	—	—	—	—	—
Average (so far as returned) }	—	—	8·6	—	—	11·7	—	—	6·0

TABLE V.—*Admissions and Deaths in General and Special Wards.*

Hospital.	General Wards. (Medical and Surgical.)			Special Wards.		General and Special Wards.		
	Admitted.	Died.	Rate of Mortality.	Admitted.	Died.	Admitted.	Died.	Rate of Mortality.
	No.	No.	Per cent.	No.	No.	No.	No.	Per cent.
St. Bartholomew's...	—	—	—	—	—	—	—	—
Guy's	3,828	455	11·88	1,040	13	4,888	468	9·57
St. Thomas's.....	—	—	—	—	—	—	—	—
London	—	—	—	—	—	—	—	—
St. George's	3,713	326	8·77	Nil	Nil	3,713	326	8·77
Middlesex	—	—	—	—	—	—	—	—
St. Mary's	1,619	162	10·0	96	2	1,715	164	9·56
Westminster.....	1,820	181	9·94	Nil	Nil	1,820	181	9·9
King's College	1,626	163	10·02	„	„	1,626	163	10·0
University	—	—	—	—	—	—	—	—
Royal Free	—	—	—	—	—	—	—	6·8
Charing Cross	—	—	—	—	—	—	—	—
Metropolitan Free..	121	6	4·9	Nil	Nil	126	6	4·7
Great Northern ...	111	5	4·5	—	—	—	—	—
Totals (so far } as returned) }	12,838	1,298	Average 8·5	1,136	15	13,888	1,308	Average 8·4

TABLE VI.—*Number of Admissions and Deaths; and the Death-rate in St. George's Hospital during Thirty-Six Years, 1827-62.*

Years.	Admissions.	Deaths.	Rate of Mortality.	Years.	Admissions.	Deaths.	Rate of Mortality.
1827	1,607	210	13·0	1846	3,375	276	8·1
'28	1,584	190	11·9	'47	3,265	263	8·0
'29	1,594	240	15·0	'48	3,334	267	8·0
'30	1,572	225	14·3	'49	3,201	264	8·2
				'50	2,981	232	7·7
1831	1,635	209	12·7				
'32	1,613	196	12·1	1851	3,289	267	8·1
'33	1,742	218	12·5	'52	3,518	252	7·1
'34	1,906	227	11·9	'53	3,479	270	7·7
'35	1,991	226	11·3	'54	3,703	396	10·6
				'55	3,476	336	9·6
1836	2,235	241	10·7				
'37	2,694	265	9·8	1856	3,512	298	8·4
'38	2,786	312	11·2	'57	3,530	304	8·6
'39	3,010	244	8·1	'58	3,372	315	9·3
'40	2,988	277	8·9	'59	3,497	292	8·3
				'60	3,625	333	9·1
1841	2,968	265	8·9				
'42	3,141	235	7·4	1861	3,646	318	8·7
'43	3,155	204	6·4	'62	3,713	326	8·7
'44	3,284	293	8·9				
'45	3,205	295	9·2				

TABLE I.—General Results. (No distinction

Hospital.	Remaining 1st January, 1862.	Admitted during the Year.	Total.	Discharged Well or Convalescent.	Relieved.
	No.	No.	No.	No.	No.
York County	49	595	644	348	174
Devonshire (Buxton, } Derbyshire) {	10	728	738	674	—
Norfolk and Norwich	104	936	1,040	710	83
Taunton and Somerset	86	806	892	755	—
Stockport (infirmary)	14	290	304	234	20
Gloucester „	103	603	706	193	323
Royal Isle of Wight (in- firmary)	5	135	140	98	20
West Sussex, East Hants, and Chichester (infirm- mary)	36	321	357	94	180
Hull General (infirmary)	109	971	1,080	629	43
Cheltenham	67	531	598	354	125
Leicester	59	896	955	610	74
Wolverhampton	53	546	599	245	218
Totals	695	7,358	8,053	4,944	1,260

TABLE II.—Medical and Surgical

Hospital.	Medical Wards.					
	Remaining 1st January, 1862.	Admitted during the Year.	Total.	Dis- charged.	Died.	Remaining 1st January, 1863.
	No.	No.	No.	No.	No.	No.
York County	20	244	264	219	21	24
Devonshire (Buxton, } Derbyshire) {	—	—	—	—	—	—
Norfolk and Norwich	38	400	438	366	22	50
Taunton and Somerset	—	—	—	—	—	—
Stockport (infirmary)	—	—	—	—	—	5
Gloucester „	28	204	232	190	16	26
Royal Isle of Wight (in- firmary)	—	—	—	—	—	—
West Sussex, East Hants, and Chichester (infirm- mary)	19	139	158	127	10	21
Hull General (infirmary)	46	438	484	408	38	38
Cheltenham	31	180	211	183	10	18
Leicester	—	—	—	—	—	—
Wolverhampton	22	154	176	176	—	—
Totals (so far as returned)	204	1,759	1,963	1,669	117	182

HOSPITALS.

of Sex; nor of Medical or Surgical Cases.)

Unrelieved.	Discharged for Special Reasons.	Died.	Remaining 1st January, 1863.	Brought in Dead.	Hospital.
No.	No.	No.	No.	No.	
29	—	39	54	Nil	York County
35	10	1	18	"	{ Devonshire (Buxton, Derbyshire)
14	66	44	114	9	Norfolk and Norwich
49	—	17	71	—	Taunton and Somerset
—	—	23	27	Nil	Stockport (infirmary)
4	62	31	93	"	Gloucester "
4	3	7	8	"	{ Royal Isle of Wight (in- firmary)
3	20	20	40	"	{ West Sussex, East Hants, and Chichester (infirm- ary)
11	216	69	112	Nil	Hull General (infirmary)
9	36	15	59	"	Cheltenham
44	37	51	139	"	Leicester
6	26	51	53	"	Wolverhampton
208	476	368	788	9	Totals

Cases, without distinction of Sex.

Surgical Wards.						Hospital.
Remaining 1st January, 1862.	Admitted during the Year.	Total.	Dis- charged.	Died.	Remaining 1st January, 1863.	
No.	No.	No.	No.	No.	No.	
29	351	380	332	18	30	York County
—	—	—	—	—	—	{ Devonshire (Buxton, Derbyshire)
66	536	602	507	31	64	Norfolk and Norwich
—	—	—	—	—	—	Taunton and Somerset
—	—	—	—	—	22	Stockport (infirmary)
75	399	474	392	15	67	Gloucester "
—	—	—	—	—	—	{ Royal Isle of Wight (in- firmary)
17	182	199	170	10	19	{ West Sussex, East Hants, and Chichester (infirm- ary)
63	533	596	491	31	74	Hull General (infirmary)
36	351	387	341	5	41	Cheltenham
—	—	—	—	—	—	Leicester
31	392	423	—	—	—	Wolverhampton
317	2,744	3,061	2,233	110	317	Totals (so far as returned)

TABLE III.—Average Number of Patients and Mean Residence.

Hospital.	All Cases.				Medical Cases.				Surgical Cases.			
	Average Number Resident.			Mean Residence.	Average Number Resident.			Mean Residence.	Average Number Resident.			Mean Residence.
	Males.	Females.	Total.		Males.	Females.	Total.		Males.	Females.	Total.	
	No.	No.	No.	Days.	No.	No.	No.	Days.	No.	No.	No.	Days.
York County	—	—	61	38	—	—	—	—	—	—	—	—
Devonshire (Buxton, } Derbyshire)	—	—	—	—	—	—	—	—	—	—	—	—
Norfolk and Norwich ..	71	50	121	42	22	31	53	45	48	19	67	51
Taunton and Somerset ..	—	—	—	—	—	—	—	—	—	—	—	—
Stockport (infirmery)...	—	—	—	—	—	—	—	—	—	—	—	—
Gloucester „ ...	62	36	98	—	13	14	27	—	49	22	71	—
Royal Isle of Wight } (infirmery)	8	5	13	36	—	—	6	—	—	—	7	—
West Sussex, East } Hants, and Chi- } chester (infirmery) }	—	—	37	—	—	—	—	—	—	—	—	—
Hull General (infirmery) }	60	29	89	28	21	11	32	25	39	18	57	31
Cheltenham	24	32	56	35	7	13	20	20	17	19	36	37
Leicester	—	—	—	—	—	—	—	—	—	—	—	—
Wolverhampton	—	—	58	35	—	—	23	—	—	—	35	—
Totals (so far as } returned)	225	152	533	Average 36	63	69	161	Average 30	153	78	273	Average 39

TABLE IV.—Rate of Mortality.

Hospital.	All Cases.			Medical Cases.			Surgical Cases.		
	Males.	Females.	Rate of Mortality.	Males.	Females.	Rate of Mortality.	Males.	Females.	Rate of Mortality.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
York County	3.0	3.0	6.0	—	—	—	—	—	—
Devonshire (Buxton, } Derbyshire)	—	—	—	—	—	—	—	—	—
Norfolk and Norwich	5.7	4.1	5.1	7.8	2.8	5.0	4.8	6.1	5.1
Taunton and Somerset	1.8	1.3	2.1	—	—	—	—	—	—
Stockport (infirmery)	—	—	7.9	—	—	—	—	—	—
Gloucester „	5.7	3.9	5.0	10.9	4.1	—	3.6	3.7	—
Royal Isle of Wight (infirmery) }	7.7	.5	5.0	8.3	1.6	10.0	1.2	—	1.2
West Sussex, East Hants, } and Chichester (infirmery) }	6.9	5.0	6.2	8.6	5.1	7.1	5.8	4.8	5.4
Hull General (infirmery) ...	7.5	4.0	6.0	9.2	4.7	7.7	5.2	5.0	5.2
Cheltenham	—	—	3.0	—	—	2.0	—	—	1.0
Leicester	—	—	5.7	—	—	—	—	—	—
Wolverhampton	—	—	9.3	—	—	—	—	—	—
Average (so far as } returned)	—	—	5.6	—	—	6.3	—	—	3.6

TABLE V.—Admissions and Deaths in General and Special Wards.

Hospital.	General Wards. (Medical and Surgical.)			Special Wards.		General and Special Wards.		
	Admitted.	Died.	Rate of Mortality.	Admitted.	Died.	Admitted.	Died.	Rate of Mortality.
	No.	No.	Per cent.	No.	No.	No.	No.	Per cent.
ork County	595	39	6·5	Nil	Nil	595	39	6·5
evonshire (Buxton, } Derbyshire)	739	1	·1	„	„	739	1	·1
orfolk and Norwich*	936	48	5·1	„	„	936	48	5·1
untun and Somerset	806	17	2·1	45	„	851	17	1·9
ockport (infirmary)	290	23	7·9	Nil	Nil	290	23	7·9
oucester „	706	31	4·3	„	„	706	31	4·3
oyal Isle of Wight (in- firmary)	135	7	5·1	„	„	135	7	5·1
est Sussex, East Hants, and Chichester (infir- mary)	321	20	6·2	„	„	321	20	6·2
all General (infirmary) ...	—	—	—	—	—	—	—	—
eltenham	—	—	—	—	—	—	—	—
icester	—	—	—	—	—	—	—	—
olverhampton	—	—	—	—	—	—	—	—
Totals (so far as returned).....	4,528	186	4·6	45	Nil	4,573	186	4·6

Note.—In all these tables the blanks (—) must be understood to imply an absence of information. The information comprised in Table V respecting special wards, was supplied by the several hospitals in answer to a circular letter sent by the honorary secretaries of the Statistical Society. The inquiry was suggested by the wide differences existing in the rates of mortality in hospitals having many circumstances in common.

* *Norfolk and Norwich Hospital.*

	Table for 22 Years.				Table for 90 Years.†		
		Total Deaths.	Rate of Mortality (Yearly Per- centage.)			Total Deaths.	Rate of Mortality (Yearly Per- centage.)
Total number of in-patients ad- mitted during the last 22 years	18,112	859	4·7	Total number of in- patients admitted during the last 90 years.....	52,199	2,936	5·5
Average number of in-patients ad- mitted yearly	823	39		Average number of in-patients ad- mitted yearly	580	33	

† This table includes 22 years of the previous table.

MISCELLANEA.

CONTENTS:

	PAGE		PAGE
I.—The Diffusion of Cheap Literature in England.....	410	III.—Statistics of Sunday Schools in Manchester and Salford .	421
II.—The Criminal Statistics of Aberdeen for Twenty Years	413	IV.—The Russian Budget for 1864	426
		V.—Disease in the Army	434

I.—*The Diffusion of Cheap Literature in England.*

MR. EDWARD BAINES, in addressing the House of Commons recently, stated some valuable and very gratifying facts as to the progress made of late years in the education of the people, and in the diffusion among them of a cheap but wholesome periodical literature.

The following extracts have been taken from Mr. Baines' speech:—*

“You will allow me, however, to bring before you two branches of evidence which are to my mind absolutely conclusive and irresistible on the subject. The first has reference to education, the second to our periodical and popular literature. * * * * In 1831 there were no statistics of education later than those obtained by Lord Brougham's Commission in 1818; and indeed it was the children of 1818 who were the men of 1831, and had to exercise the franchise. What was the proportion, according to these statistics, of the educated among the population? The whole number of day scholars in England and Wales was only 674,883, and the proportion to population was 1 in 17. It is true that after the Reform Bill passed there was another Royal Commission, which showed that the proportion at that time had very much increased, and in the year 1833 it was ascertained that the number of scholars had increased to 1,276,947, being in the proportion of 1 to 11 of the population. In the year 1858 it was found by the last Royal Commission on Education that the scholars amounted to 2,535,462, bearing the proportion of 1 in 7·7 to the population. And we learn from the Census of 1861 that the number of scholars (including, however, those receiving private tuition) was then 3,150,048, being in the proportion of 1 in 6·4. This shows England to have become one of the best educated countries in the world. Between 1833 and 1861 the population of England and Wales increased only 40 per cent., but the increase of day scholars was 147 per cent. * * * *

“But there is another branch of evidence which is still more important, and that is the amount of popular literature which is now distributed. There has been a marvellous spread of cheap literature, and the facts I shall lay before you will, I hope, induce those who

were inclined to find a good deal of fault with the Chancellor of the Exchequer and the President of the Board of Trade for advocating the repeal of the paper duty, to forgive those right honourable gentlemen for the part they took in that question. For the facts I am about to state I am indebted mainly to Mr. John Francis, the publisher of the *Athenæum*, who has obtained the assistance of Messrs. Mitchell, publishers of the *Newspaper Press Directory*, and of the principal publishers of periodical and serial literature in London. The newspaper circulation is given for the United Kingdom :—

Newspaper Circulation in 1831 and 1864.

1831.

Stamps Issued to Newspapers :

In England	32,000,000
„ Ireland	4,360,564
„ Scotland	2,287,750
Total for the United Kingdom	<u>38,648,314</u>

1864.

London Papers—		Copies Issued in the Whole Year.
Daily (daily circulation)	248,000	87,776,000
Weekly (weekly circulation)....	2,263,200	<u>117,686,400</u>
Total circulation of London papers		<u>205,462,400</u>

Provincial Papers—

Daily (daily circulation).		
In England (27 papers).....	263,000	
„ Wales (1 paper)	2,000	
„ Ireland : (14 papers).....	96,000	
„ Scotland (9 „).....	77,000	
„ Jersey (1 paper)	1,000	
(52 papers).....	<u>439,000</u>	<u>137,407,000</u>

[In 1854 there were only 5 provincial daily papers, with an aggregate circulation of 10,000 copies per day.]

Weekly (961 papers).		
(Weekly circulation)	3,907,500	<u>203,190,000</u>
Total circulation of provincial papers....		<u>340,597,000</u>
Grand total in the United Kingdom		<u>546,059,400</u>

Or 1,313 per cent. more than in 1831.

“This is only as to political information, but there has happily sprung up a vast amount of most useful and interesting literature in the shape of magazines, periodicals, and serials, the increase of

which has been even more marvellous than the increase of the newspapers. I have here the monthly returns of the magazines and journals of a literary, scientific, and religious kind in London and some of the principal cities. * * * * I find that in London there are published monthly:—

Literary Periodicals and Serials in 1864.

Description.	Number of Publications.	Price.	Monthly Issue.
<i>Monthly—</i>			
Religious.....	84	$\frac{1}{2}d.$ to $5d.$	1,469,500
„ magazines	22	{ $6d.$ and upwards }	400,000
Temperance	20	$\frac{1}{2}d.$ to $3d.$	793,250
Useful, educational, and entertaining ...	19	$1d.$ to $6d.$	338,500
Magazines and serials of a higher class	54	$1s.$ to $2s. 6d.$	244,850
Serials issued by great publishing firms, highly embellished and illustrated (<i>per number</i>)	—	$1s.$ to $3s. 6d.$	363,250
Total of monthly publications	—	—	3,609,350
<i>Weekly—</i>			
Religious	15	$1d.$ and $1\frac{1}{2}d.$	489,600
Useful, educational, and entertaining, including serial republications of standard works	32	$1d.$ to $3d.$	734,000
Journals, containing novels, tales, biographical sketches, &c.	13	$\frac{1}{2}d.$ and $1d.$	1,053,000
Romances, exciting wonder and horror	8	$1d.$	195,000
Immoral publications (three years ago 52,500)	—	$1d.$	9,000
Free-thinking, under.....	—	—	5,000
Total of weekly publications.....	—	—	2,485,600
Grand total of monthly and weekly publications.....	—	—	6,094,950

“The aggregate circulation of monthly magazines in 1831, as estimated by those best qualified to judge, did not exceed 125,000, whereas now it is *three millions*. I believe the sale of weekly magazines would not then be more than 125,000. There were serials published, which I believe may be taken at something like 120,000; and I should be far beyond the mark if I say that at that time there were 400,000 monthly and weekly copies of literary periodicals issued. The number now is 6,094,950, or *fifteen fold* the number in 1830! I am sure this result will be regarded as most gratifying, and I believe there are few who could have anticipated the possibility of such a change from sweeping away the taxes on knowledge, and throwing open, I may say, the flood-gates of knowledge to the people.”

II.—*The Criminal Statistics of Aberdeen for Twenty Years.*

FROM the *Aberdeen Herald* of the 21st May :—

“ Some of the county gentlemen, in their discussion on the motion of Mr. Thomson of Banchory that the Prison Board be authorized to contribute to the funds of Oldmill Reformatory, raised the question whether the landward part of the county has specially benefitted by the establishment of this and kindred institutions ; and Mr. Edmond, of Kingswells, also called attention to the circumstance that our prison expenditure, instead of diminishing, quite recently increased. Add to this the consideration that the number of criminals committed to prison has also increased—the total for 1863 being the greatest that has been reached for the past twenty years—and that the number of offences reported in the county during the past year was 50 per cent. greater than the number reported in 1856. Facts like these, on the first blush, seem to leave no room for escape from the conclusion that crime is sadly on the increase. But these statistical appearances on examination prove deceptive ; and by way of aiding the public as well as the committee of county gentlemen who have been appointed by the Commissioners of Supply to take bearings and ascertain how the land really lies in this matter, we have prepared a series of tabular views, bringing out various aspects of the question that may have escaped the notice even of some who are familiar with the ordinary official reports.

“ The following statement shows the apparent increase in the crime of the county :—

Number of Offences Reported in the County.

Year ending March		Year ending March	
1846	633	1856	664
'47	508	'57	734
'48	563	'58	810
'49	652	'59	1,026
'50	670	'60	1,102
1851	903	1861	981
'52	882	'62	1,184
'53	992	'63	1,034
'54	774	'64	997
'55	652		

“ The offences reported during last year, it will be observed, were fewer than during the two preceding years, but still greater by one-half than several other years on the list—exceeding by nearly 100 per cent. the total for 1847 ; and over the whole series of years there is, generally speaking, an increase.

“ But this increase has been in a very different ratio among the less and more hardened classes of criminals, as the following table indicates :—

Criminals Committed to Prison.

Year.	Total.	Average.	First, Second, and Third Time.	Average.	Fourth, Fifth, and Sixth Time.	Average.
1843	742	735	621	594	86	92
'44	713		560		89	
'45	761		620		89	
'46	683		542		87	
'47	800		626		111	
1848	777	853	602	542	115	119
'49	1,011		743		175	
'50	943		713		128	
'51	800		648		98	
'52	734		603		78	
1853	810	814	673	619	93	107
'54	756		633		67	
'55	930		678		164	
'56	753		539		112	
'57	820		571		100	
1858	885	972	633	636	97	110
'59	910		611		120	
'60	785		522		93	
'61	—		No return		—	
'62	1,091		650		115	
'63	1,189		766		124	

“The last five years of the twenty show, it will be observed, an increase of nearly one-third in the total number of criminal prisoners as compared with the first five years. The year 1849 found that class of the population among whom breaches of the peace are most apt to arise in the condition in which the Rev. Mr. Shirra found the weavers of Path-head when he prayed publicly for them that they might have ‘less wages or mair wit;’ and but for the unusual number of such offences that year—as will be brought out by a subsequent table—the increase in the number of commitments would have been gradual on the five-yearly average over the whole twenty years. The total of 1862 was, it will be seen, the highest that had been reached for twenty years, till eclipsed by the still higher total of 1863. On looking, however, at the number of commitments for a first, second, and third time, and for a fourth, fifth, and sixth time, we come on the significant fact that the increase is in a very much smaller ratio among the less hardened classes of offenders, their proportion being little more than one-fifth. The increase is plainly due to the growing frequency of recommitments, which, as will be observed from the proceedings at the county meeting on Wednesday, is forcing itself on the attention of prison authorities, not only here, but in other parts of the country.

“The following table of very young committals, and of committals for theft, the offence under which we may expect to find the bulk of juvenile offenders, throws additional light on this point. To appreciate the full force of the two columns referring to juveniles exclusively, it is necessary to remember that with the year 1854 apprehensions for begging began. Making the necessary allowance for this, and for the greater efficiency of the county police, the reduction in the amount of juvenile crime appears to have been pretty steady over the whole period:—

Committals.

Year.	Age, 12 and Under.	Average to Nearest Unit.	Age, 12 to 16.	Average to Nearest Unit.	Total of all Ages for Theft.	Average to Nearest Unit.
1843	53	40	74	102	330	326
'44	41		94		275	
'45	49		101		320	
'46	28		114		322	
'47	27		128		381	
1848	19	18	136	115	352	325
'49	16		125		297	
'50	22		115		325	
'51	8		90		318	
'52	24		110		333	
1853	25	39	141	123	349	315
'54	49		142		342	
'55	37		151		319	
'56	43		104		282	
'57	40		76		283	
1858	15	21	83	61	244	260
'59	23		64		262	
'60	13		60		243	
'61	—		No return		—	
'62	27		50		270	
'63	27		47		282	

“ The special increase in the number of juvenile cases caused in the city by the raid against begging, which began with 1854 and has continued during subsequent years, is still more clearly brought out by the following return : —

Boys under 15 Apprehended and Convicted in the City of Aberdeen.

Year.	Apprehended.	Convicted.	Year.	Apprehended.	Convicted.
1844.....	60	44	1854	103	90
'45.....	112	94	'55	126	75
1846.....	110	77	1856	90	46
'47.....	76	69	'57	91	47
'48.....	62	57	'58	71	34
'49.....	67	48	'59	50	31
'50.....	48	37	'60	50	38
1851.....	31	27	1861	50	25
'52.....	89	52	'62	71	42
'53.....	69	65	'63	66	38

“ That the increase among these classes is only apparent may be gathered from the following return, which furnishes a still clearer index to the real state of the case :—

Offences Charged against Persons Committed.

Year.	Assault.	Theft by House-breaking, &c.	Theft.	Fraud.	Malicious Mischief.	Breach of Peace.	Game Law Offences.	Public House Act.	Aberdeen Police Act.
1843	134	21	330	18	24	79	6	—	10
'44	143	32	275	30	28	89	10	—	6
'45	167	23	320	12	21	95	1	—	1
1846	135	22	322	10	14	98	2	—	1
'47	151	24	381	17	17	136	5	—	3
'48	111	8	352	13	33	144	3	—	2
'49	196	15	297	45	29	350	4	—	1
'50	189	21	325	37	41	241	9	—	7
1851	171	9	318	22	26	160	5	—	6
'52	125	24	333	13	26	111	15	—	5
'53	170	12	349	22	23	145	9	—	3
'54	138	21	342	10	24	135	12	4	3
'55	121	21	319	14	20	265	19	3	3
1856	101	11	282	17	24	190	10	—	3
'57	107	23	283	21	14	267	4	—	19
'58	133	14	244	21	12	355	8	—	32
'59	124	4	262	20	17	389	8	1	2
'60	102	8	243	19	8	330	16	—	3
1861				No	return.				
'62	122	17	270	22	20	262	7	104	182
'63	121	15	282	17	16	293	21	123	243

" In these two last columns we have at a glance the explanation of the large totals reached in 1862 and 1863. Forbes Mackenzie and the new *besom* of the Aberdeen Police Act have done it. Observe, too, that the commitments under these two heads will necessarily be almost wholly included in the above lists of the less inured criminals. Making allowance for this, it is easy to see that the proportion of crime to be assigned during these latter years to be regular *habitués* of our prisons must be considerably larger than the return of commitments, without this explanation, might be held to prove. There is, it will be observed, an apparent increase over the twenty years in the number of breaches of the peace; but the increase is not actual. It is due entirely to the superior efficiency of our police establishments. In 1845, the whole county force numbered twenty-four men; now it numbers seventy-one, ably superintended. Formerly the county constables could not pretend to deal effectually even with the professional thieves and masterful beggars; now they are practically ubiquitous, and nothing worth mentioning escapes them. The extent to which the increase in the number of commitments consists of trifling cases is conclusively brought out by the following statement :—

*Average Duration of Imprisonment of each Individual, entered to
Nearest Unit.*

Year.	Period of Imprisonment.	Year.	Period of Imprisonment.
1850	50 days	1857	31 days
'51	44 "	'58	28 "
'52	48 "	'59	33 "
'53	45 "	'60	30 "
'54	40 "	'61	24 "
'55	36 "	'62	20 "
'56	36 "	'63	18 "

“The reduction, it will be seen, has been steady during the past fourteen years; showing that the increase in the number of committals has been due not to increase in the amount of crime, but to increase in the vigilance and efficiency of the police, who now manage to make a clean sweep of the crime of the county. The meshes of the police net, in short, have been reduced; and minor criminals who would formerly have been allowed to escape are now duly landed in the cells. This increased efficiency is incidentally brought out by the following figures which refer exclusively to the county:—

Year ending March	Property Reported Stolen, and Property Recovered.		Offences Reported and Cases Undiscovered.		
	Reported Stolen.	Recovered.	Offences Reported.	Persons Implicated.	Undiscovered or Absconded.
1859.....	£ s. d. 743 18 2	£ s. d. 217 19 -	1,026	1,031	295
'60.....	812 6 7	299 18 4	1,102	1,010	333
1861.....	1,191 9 2	182 18 1	981	949	333
'62.....	572 4 1	167 13 10	1,184	1,168	343
'63.....	570 18 5	219 2 10	1,034	1,076	303
'64.....	526 3 6	240 1 4	997	1,070	256

“During the first three of these years,* it will be observed, the amount of property reported stolen was 2,747*l.*; while during the second three years, it had decreased to 1,669*l.* The amount recovered during the first three years was about one-fourth; while the amount recovered during the second three years was considerably more than one-third. On the other hand, while the total number of persons implicated in reported offences has increased, the number of those who have been able to escape detection has diminished.

“But the most striking feature of our twenty years’ experience, and that to which we would specially call the attention of gentlemen disposed to doubt whether the county has greatly benefited from the Industrial School system, is to be found by comparison of the following rows of figures, showing, on the hand, the number of county convictions of all ages, and, on the other, the number of vagrants found in the county of the class with which the Reformatory and the Industrial School profess to deal:—

* Where the returns extend over a less period than twenty years, the sole reason of the deficiency is, that we have been unable to lay hands on the figures in an available shape except for the years given.

Year.	Vagrants found in County and Reported by Police.						Convictions of all Ages.	
	Total.	Average to Nearest Unit.	Children with Adults.	Average to Nearest Unit.	Children Alone.	Average to Nearest Unit.	Annual Total.	Average to Nearest Unit.
1841....	2,459	} 2,247	328	} 318	27	} 55	113	} 185
'42....	2,103		272		57		198	
'43....	2,267		370		77		245	
'44....	2,161		302		60		183	
1845....	2,163	} 1,371	302	} 245	65	} 18	205	} 221
'46....	1,301		250		14		254	
'47....	1,129		211		6		216	
'48....	1,118		225		6		163	
'49....	1,145		239		1		267	
1850....	1,172	} 1,445	260	} 346	2	} 10	220	} 247
'51....	1,013		170		4		242	
'52....	1,204		258		8		277	
'53....	2,186		585		21		258	
'54....	1,649		456		17		239	
1855....	1,575	} 1,106	416	} 270	8	} 5	207	} 278
'56....	1,223		297		9		257	
'57....	946		199		1		260	
'58....	761		169		4		275	
—	—		New		Act		—	
'59....	1,026	} Under	271	} Police	3	} 1	390	} 475
1860....	708		187		4		518	
'61....	495	} 543	107	} 136	0	} 1	358	} 475
'62....	807		198		1		605	
'63....	377		109		0		455	
'64....	326		77		0		440	

“ Here, then, we find that what may with peculiar propriety be called our class of pupil criminals has practically been swept out of the county—that the growing ubiquity of the police, to which we must attribute the increase in the number of annual convictions for crime, has served effectually to remove from our highways and byeways that class of juveniles among whom our most thoroughbred and most abandoned criminals are naturally reared. The return for the last two years is *nil*. But for the Reformatory and Industrial Schools, how could this result have been attained? The saving to the county by the reform of one of these little marauders is, we need not say, something very much beyond the cost of his keep either in prison or in Reformatory. One night’s plunder may cost a farmer or a laird more than a dozen years’ assessment.

“ But, then, the vagrancy returns are increasing; and what is the explanation of that fact? Its explanation will be found in the following table:—

Vagrants and Tinkers Reported in County.

Year ending March	Belonging to County.	To City and Suburbs.	Elsewhere in Scotland.	English.	Irish.	Gipsies or Tinkers, most of them Encamping.	Total.
1853.....	151	818	1,102	16	99	601	2,787
'54.....	118	597	841	18	75	830	2,479
'55.....	94	551	850	22	58	1,030	2,605
1856.....	90	457	618	9	49	866	2,089
'57.....	95	270	547	10	24	732	1,678
'58.....	73	218	430	11	29	821	1,582
'59.....	136	270	583	14	31	1,162	2,188
'60.....	42	113	519	8	26	1,348	2,056
1861.....	20	115	344	1	15	1,090	1,585
'62.....	50	127	590	16	24	1,873	2,680
'63.....	15	95	261	2	4	1,449	1,826
'64.....	16	47	249	6	8	2,336	2,662

“ The enormous apparent increase in the number of gypsies or tinkers is due in no small measure to the increased vigilance of the police. The rule is, and has been, that every constable reports gypsies who pass through his beat, and from the increased number of beats the same camp of gypsies is now reported an increased number of times. Among the ordinary classes of vagrants the reduction is very marked. The city sent to the county, in 1853, seventeen vagrants for every one it sent last year; and the county had about nine vagrants of its own in the former year for every one it had in the latter.

“ Having seen whence the vagrants come, it may be well to ascertain whence the criminals come:—

Where Prisoners have passed greater part of Life.

Year.	Town.	Country.	Elsewhere in Scotland.	England.	Ireland.	Foreign.	Total.
1845.....	421	126	113	23	67	1	751
1846.....	367	146	120	16	31	3	683
'47.....	461	157	146	9	15	12	800
'48.....	439	137	147	8	28	18	777
'49.....	549	170	190	30	45	27	1,011
'50.....	466	178	212	16	51	20	943
1851.....	358	167	209	13	33	20	800
'52.....	361	158	147	15	32	21	734
'53.....	410	167	155	21	39	18	810
'54.....	355	182	164	15	27	13	756
'55.....	478	202	192	16	24	18	930
1856.....	406	150	159	15	15	8	753
'57.....	436	169	153	30	20	12	820
'58.....	459	164	217	20	18	7	885
'56.....	483	193	176	20	27	11	910
'60.....	394	171	177	18	9	16	785
1861.....			No return				
'62.....	516	319	174	27	44	11	1,091
'63.....	519	286	271	25	61	27	1,189

“Deducting from the town return for 1862 the 286 committals for offences against the Public Houses and Aberdeen Police Acts, and from last year the 366 convictions under the same statutes, the city will be seen to stand more favourably than the county; but the increase in the county is entirely due to trifling cases of a class that in former times necessarily passed unnoticed.

“The following table shows that the increase of committals has taken place, in large measure, among those who are not educated, or but imperfectly so:—

Education of Prisoners.

Year.	Could Read.			Could Write.			Superior Education.
	None.	Little.	Well.	None.	Little.	Well.	
1843.....	85	433	212	317	311	102	12
'44.....	80	426	201	324	301	82	6
'45.....	108	441	195	351	284	109	7
1846.....	159	304	211	327	302	45	9
'47.....	193	325	272	413	330	47	10
'48.....	184	338	251	386	330	57	4
'49.....	222	479	308	537	440	32	2
'50.....	205	472	261	503	404	31	5
1851.....	174	435	189	424	353	21	2
'52.....	136	431	163	378	329	23	4
'53.....	190	420	196	422	356	28	4
'54.....	199	384	171	430	299	25	2
'55.....	238	460	230	511	401	16	2
1856.....	175	405	170	405	324	21	3
'57.....	153	465	202	460	330	30	4
'58.....	202	470	213	499	352	34	8
'59.....	178	519	213	485	394	31	6
'60.....	143	444	198	410	343	32	4
1861.....	No return						
'62.....	197	762	132	501	531	58	6
'63.....	174	896	119	462	633	94	17

“Possibly, however, the very marked increase in the number of uneducated prisoners during the past two years may be in some measure attributable to the adoption by Mr. Rutledge of a rather higher test than was formerly used.

“The recent increase in our prison expenditure, referred to by Mr. Edmond, admits of an easy explanation. It is due to the same cause that has made a blank in the return for 1861—the illness of the late Governor of the Prison, and consequent wasteful confusion. The following are the figures for the past thirteen years:—

Year ending June	Aberdeen Prison.	Total of County Prisons.	Year ending June	Aberdeen Prison.	Total of County Prisons.
	£	£		£	£
1851	1,467	1,625	1858	1,357	1,531
'52	1,408	1,557	'59	1,399	1,573
'53	1,432	1,586	'60	1,378	1,554
'54	1,442	1,615	'61	1,352	1,500
'55	1,478	1,646	'62	1,411	1,590
'56	1,420	1,614	'63	1,339	1,513
'57	1,366	1,556			

“ Last year, it will be observed, under the management of Mr. Rutledge, the cost of the prison was brought to a lower figure than it had reached during the past thirteen years, and, as is well known, very important additional savings are expected both this year and next.

“ So far we have been merely looking at our own present position as compared with the past; but it is not uninteresting to know how the head-quarters of the Industrial School system may compare with other counties :—

Proportion of Criminals to Population in the Principal Counties of Scotland for the Past Year (1863).

Counties.	Population.	Average Daily Number in Prisons in County.	Number of Persons for each Prisoner in County.	Number of Prisons in County.
Aberdeen	211,569	57	3,887	4
Ayr	198,971	58	3,430	2
Edinburgh	273,997	364	752	2
Dumfries	75,878	27	2,810	1
Fife	154,770	29	5,336	2
Forfar	204,425	93	2,198	5
Lanark	631,566	360	1,127	4
Perth.....	133,500	62	2,153	3
Renfrew	177,561	96	1,849	3
Stirling	91,926	46	1,998	2

“ Aberdeenshire, it will be observed, stands more favourably than any other important county, with the single exception of Fife, an agricultural district with no great centres of population.

“ It is also satisfactory to know that the benefits of the Reformatory System appear to be felt all over the country. To this conclusion we are pointed by the following return :—

Average Daily Number of Criminal Prisoners in the several Prisons of Scotland.

	Yearly Average of Five Years ending 30th June, 1856.	Yearly Average of Five Years ending 30th June, 1861.	Years ending June		
			1861.	1862.	1863.
Total commitments	21,372	18,575	18,578	19,701	22,452
Under 16 years of age	1,887	1,244	1,212	1,120	1,075
Sentences to imprisonment for 10 days and under.... }	2,715	2,573	2,619	2,711	3,610

III.—*Statistics of Sunday Schools in Manchester and Salford.*

THE interesting tables subjoined, have been taken from the *Manchester Guardian*. It has been the custom lately for the Sunday Schools in and about Manchester, to meet and walk in procession on Whit-Monday,

The proprietors of the *Manchester Guardian* appear to have taken the opportunity which that event affords, to collect and publish, immediately after the holiday, what may be termed a concise census of those remarkable gatherings; especially remarkable, when we observe the variety of sects which then act in concert.

“The following are the statistics of a large proportion of the Sunday Schools, of all denominations, in Manchester and Salford. They include the particulars respecting 150 schools, but as last year 185 schools were represented in the list, which was then compiled for the first time, there is a large number of returns yet to come to hand. Under these circumstances we are compelled to postpone for one day our table of totals.

	Average Attendance.		Total Average Attendance.	Number of Teachers.	Volumes in Library.
	Boys.	Girls.			
<i>Church of England—</i>					
St. Mary's, Hulme	80	144	224	24	—
„ George's, „	300	400	700	48	900
All Souls, Every Street	200	180	380	30	—
St. Mark's, Grtn. Brook	—	—	417	25	250
German Street	298	313	611	72	1,300
St. Michael's, Hulme	303	274	577	52	300
„ Thomas's, Crumpsall.....	144	160	304	30	300
Albert Memorial, Collyhurst	164	136	300	30	—
St. Paul's, Paddington	200	200	387	32	300
„ James's, Birch	94	81	175	27	—
<i>Christ Church, Salford—</i>					
Hulme	220	230	450	60	750
Hope Street	180	175	355	50	800
„ Ragged School ..	70	100	170	22	—
„ Adult „	—	—	70	4	—
St. Stephen's, Chorlton-on- } Medlock	—	—	405	26	—
„ Paul's, Hulme	146	150	296	30	—
Christ Church, Pendlebury	247	230	477	38	—
St. Philip's, Hulme	350	300	650	50	1,600
„ John's, Pendlebury	80	80	160	20	—
„ Luke's, Chorlton-on-Medlock	100	115	215	24	—
„ Mark's, Hulme	150	160	310	37	—
Holy Trinity.....	140	205	345	32	420
St. Gabriel's, Hulme	—	—	100	—	—
„ Philip's, Salford.....	—	—	420	27	—
„ Luke's, Cheetham Hill	—	—	196	32	250
„ Margaret's, W. Range	102	129	231	25	650
26 Schools in the procession	—	—	13,773	—	—
<i>Independent—</i>					
Chorlton Road	170	130	300	32	—
Broughton	50	50	100	20	341
Zion Chapel	170	180	350	56	—
Bridge Street, Ancoats	55	52	107	12	380
Chapel Street, Salford.....	273	284	557	50	1,170
New Windsor, „	217	233	450	40	200
Pendleton	—	—	250	32	1,072
Longsight	90	100	190	24	950
Church Street	96	89	185	14	—

	Average Attendance.		Total Average Attendance.	Number of Teachers.	Volumes in Library.
	Boys.	Girls.			
<i>Independent—Contd.</i>					
Tipping Street, Ardwick.....	150	166	316	40	750
Cheetham Hill	68	58	126	23	322
Ashley Lane	165	162	327	36	850
Rusholme Road and Saville } Street	450	360	810	93	800
Every Street.....	132	127	259	28	442
Charlestown	205	179	384	30	380
Hope Chapel, Salford	430	450	880	67	1,800
Collyhurst Street, Odm. Road....	89	107	196	30	—
Richmond, Broughton Road	319	286	605	37	1,200
Roby Day and Sunday Schools	282	310	592	87	2,730
Cavendish Street	435	270	705	90	1,530
Knot Mill	350	250	310	31	750
Oldham Road	374	380	754	53	1,500
<i>Welsh Independent—</i>					
Booth Street East	42	59	101	14	—
<i>Wesleyan Methodist—</i>					
New Islington	—	—	190	37	600
Rydal Mount	90	86	176	19	360
Ersline Street	62	56	118	—	223
Higher Broughton	55	69	124	16	200
Broughton Road	130	170	300	27	550
Rusholme	73	58	131	13	659
Lady Barn	24	27	51	5	160
St. David (Welsh), Hardman } Street.....	79	48	127	20	—
Irwell Street, Salford	239	291	530	74	1,298
Brunswick, Pendleton.....	183	223	406	62	1,200
Queen Street, Hulme	240	160	400	33	1,120
Great Bridgewater Street	200	260	460	40	1,300
Clarence Street.....	99	105	204	35	350
Bank Meadow	180	234	414	50	700
Newton Heath	122	126	248	41	503
Gravel Lane, Salford	461	394	855	68	2,200
Oxford Road and Ormond Street	300	250	550	100	1,800
Ebenezer, Red Bank	120	151	271	34	850
Cheetham Hill, Rooden Lane, } and L. Crumpsall.....	—	—	317	—	900
Radnor Street	304	316	620	80	1,450
Ancoats.....	—	—	352	54	750
<i>United Methodists—</i>					
Mount Street	160	190	350	45	668
Oldfield Road	170	185	355	34	220
Reather Street, Oldham Road....	111	143	254	25	843
Hyde Road	—	—	534	48	—
Grosvenor Street	—	—	366	48	—
Hall Street, Greenheys	—	—	180	21	—
Beswick Street	—	—	210	29	—
Bradford	—	—	310	30	—
Openshaw.....	—	—	506	58	—
Great Jackson Street	—	—	210	24	—
Mount Street, Salford	—	—	482	47	—
Queen's Road, Collyhurst	—	—	240	22	—
Lever Street	117	79	196	46	1,260

	Average Attendance.		Total Average Attendance.	Number of Teachers.	Volumes in Library.
	Boys.	Girls.			
<i>Methodist New Connexion—</i>					
Salem.....	85	82	167	36	500
Bethesda	—	—	200	30	550
Ebenezer	85	52	137	22	650
<i>Primitive Methodist—</i>					
Collyhurst Street	56	60	116	17	—
Ogden Street	113	113	226	26	336
<i>Independent Methodists—</i>					
Salem, Pendleton.....	—	—	130	18	—
<i>Baptist—</i>					
Union Chapel, Oxford Road ...	120	110	230	35	500
Clowes Street	148	145	293	—	—
Grosvenor Street, C.-on-M. ...	150	200	550	60	—
Carpenters' Hall, Brook Street	120	80			
Great George Street, Salford ...	179	207	386	25	796
Wilmot Street	65	50	110	15	160
York Street	—	—	120	20	400
<i>Particular Baptist—</i>					
Rochdale Road.....	150	160	310	44	1,750
Higher Temple Street	85	95	180	20	300
<i>Presbyterian—</i>					
Bloomsbury	22	35	57	12	87
Trinity	55	91	146	25	474
Salford	80	77	157	17	200
<i>English Presbyterian—</i>					
Grosvenor Square	193	130	323	43	90
Mill Street, Ancoats.....	—	—	270	27	—
<i>United Presbyterian—</i>					
Coupland Street	140	160	300	40	800
Brunswick Street	73	61	—	26	1,000
<i>Unitarian—</i>					
Domestic Mission	70	60	130	25	206
Hulme Domestic Mission	75	67	142	23	150
Miles Platting	120	90	210	—	20
Dob Lane	106	80	186	—	1,200
Ford Street, Salford	—	—	70	10	—
Lower Mosley Street	240	199	439	50	1,600
<i>Roman Catholic—</i>					
St. Patrick's	620	600	1,220	84	500
„ Joseph's, Goulden Street ...	150	300	450	16	120
„ John's, Salford	400	600	1,000	74	1,010
„ Peter's, Greengate	140	180	320	24	—
„ Aloysius, Ogden Street	100	120	220	20	316
„ Wilfrid's, Hulme	586	966	1,552	50	498
„ Mary's.....	300	380	680	60	400

	Average Attendance.		Total Average Attendance.	Number of Teachers.	Volumes in Library.
	Boys.	Girls.			
<i>New Jerusalem—</i>					
Peter Street	64	88	152	30	1,031
<i>Bible Christian—</i>					
Christ Church, King Street, } Salford	57	64	87	18	—
Christ Church, Hulme.....	425	117	542	49	1,500
<i>All Denominations—</i>					
Elm Street, Oldham Road	—	—	430	60	1,100
Lever Street	115	150	265	51	1,600
<i>Ragged Schools—</i>					
Holland Street	—	—	270	39	300
Gun Street, Ancoats	—	—	200	20	—
<i>Boatman's Bethel—</i>					
Knot Mill.....	70	53	123	—	77

“ The following returns reached us too late to be included in yesterday’s table :—

	Average Attendance.		Total Average Attendance.	Number of Teachers.	Volumes in Library.
	Boys.	Girls.			
<i>Church of England—</i>					
St. Simon and St. Jude	—	—	300	15	—
<i>Independent—</i>					
Park Chapel	—	—	180	27	460
Tatton Street	—	—	230	—	—
<i>Wesleyan—</i>					
London Road	—	—	369	66	1,500
George Street, Hulme	244	290	534	60	1,250
Longsight	101	130	231	27	285
<i>Independent Methodist—</i>					
Hanover Street	59	46	105	—	920
<i>United Methodist Free Church—</i>					
Cheetwood	—	—	100	14	—
<i>Unitarian—</i>					
Strangeways	120	70	190	25	750
<i>New Jerusalem Church—</i>					
Irwell Street, Salford	45	59	104	12	650

“ We subjoin a summary of the details given in our Sunday School table yesterday, with the addition of the returns given above. We very much regret that

in many instances no notice has been taken of our request to have particulars furnished to us. Our object has been to provide the statistics of the great Sabbath-school work in this locality as completely and accurately as possible. Such a return, if continued from year to year, would prove of considerable value, as well as of especial interest to all who are connected with Sunday Schools. The compilation of the table involves no little labour, and we should be glad to see a proof that it was appreciated by the conductor of every Sunday School in the two boroughs preparing on the Whit-sunday the necessary particulars. The schools included in our tables of yesterday and to-day are fewer in number by 22 than the number tabulated last year. The Church of England shows an increase (not actual, but in the number of returns sent to us) of three schools. The Independents return the same number as last year, and the Wesleyans two more. But assuming that the United Methodist Free Church has not greatly diminished in numbers, we can only conclude, as there are only 14 schools returned this year, against 17 last year, that 3 schools have neglected to inform us of their numerical condition. The Primitive Methodists have done even worse than the United Methodists; for, whereas last year they returned 11 schools, this year they appear only to have two. Other denominations have also failed to represent their entire strength in the same manner. The following are the totals referred to above:—

Denomination.	Number of Schools.	Number of Scholars.	Number of Teachers.	Volumes in Library.
1. Church of England	53	22,998	2,093	23,332
2. Independent	24	9,163	975	17,627
3. Wesleyan	24	7,978	1,002	20,208
4. United Methodist Free Church	14	4,293	491	2,991
5. Methodist New Connection ...	3	504	88	1,700
6. Primitive Methodist	2	342	43	336
7. Independent Methodist	2	235	28	920
8. Baptist	7	1,689	184	1,856
9. Particular Baptist.....	2	490	64	2,050
10. Presbyterian	3	360	54	761
11. English Presbyterian	2	593	70	90
12. United Presbyterian.....	2	434	66	1,800
13. Unitarian	7	1,367	172	3,926
14. Roman Catholic	7	5,442	328	2,844
15. New Jerusalem.....	2	256	42	1,681
16. Bible Christians	2	629	67	1,500
17. Welsh Independent	1	101	14	—
18. For all denominations	2	695	111	2,700
19. Ragged Schools.....	3	648	59	300
20. Boatman's Bethel.....	1	123	—	77
Grand Totals	163	58,340	5,951	76,699

IV.—*The Russian Budget for 1864.*

THE following comprehensive article upon Russian Finances, embodying the official statement of the Budget for 1864, is taken *in extenso* from the *Economist* of the 6th August:—

“It is not very long since we have had the means of reviewing the official statement of the revenue and expenditure of the Russian Government. The

Russian revolutionary organ in London first published the budget of 1860 in 1861, and the Russian Government very soon after determined to enter upon a course of financial publicity. That course was evidently to be an honest one as far as it lay in the power of the Minister of Finance, for the first budget officially published corresponded most accurately in its items with the figures surreptitiously obtained by the malcontent editor of the *Bell*. The identity thus established furnishes a strong argument in favour of the truthfulness of the statement, and commands a credence which might otherwise have been denied to the official document of a despotic Power.

“The budgets of Russia have subsequently been published every year with considerable improvements as to form and comprehensiveness. M. de Reutern, the present Minister of Finance, deserves, indeed, the highest credit for the manner in which he now submits to the public his prospective balance sheet for 1864. Whatever may have been his practical success as far as the management of the Russian finances is concerned, he may fairly claim the credit of having introduced a system of public accounts which must greatly simplify the task of imperial legislation. Until within the last two years, each department of the State accumulated and funded the balances of the sums allotted to it in the yearly budgets. Hence the Minister of War and the High Admiral, were almost irresponsible and uncontrolled in their expenditure. They had money at the bank which they could devote to any purpose they choose, and the country never got the benefit of any retrenchment that might have been made. This was evidently inconsistent with the general interests of imperial finance; and M. de Reutern, therefore, caused the several departments to pay their accumulated savings into the common fund at the State Bank, insisting at the same time on more careful and accurate estimates for the future. Since then, those squandering propensities, which engendered a fictitious appearance of prosperity, and attracted commercial and financial vultures to St. Petersburg, have been considerably reduced and circumscribed. The institution of the Council of the Empire, to which the budget is now submitted, has had a most beneficial effect in the direction of economy and control. Checked severally in their estimates and accounts, the ministers mutually exercise, so to say, the supervision of our own House of Commons over the statements of the Chancellor of the Exchequer. Each minister is interested in reducing the demands of his colleagues in order that he may secure his proper share of available cash. Added to which the council is further composed of ex-ministers and expectant statesmen, who devote much energy to the examination of the public accounts. The council has deprived the Minister of Finance of much of his discretionary powers: his measures have to go through two or three sessions before they obtain the necessary sanction of the Emperor, and they are not unfrequently modified in that process. In consideration of these circumstances, we are led to believe in the truthfulness of the financial report for 1864, recently published in very great detail.

“It would appear from the budget before us that half the ordinary revenue of the empire is derived from indirect taxes, the excise on spirits alone amounting to 19,170,773*l.*,* or about two millions more than the excise duties in the United Kingdom. The system of farming out the revenue from the sale of spirits having been abolished since 1862 and the price of the article reduced 50 per cent., the consumption of alcoholic liquors increased 25 per cent. in the year 1863, and is rapidly becoming greater.

“The Customs only bring in 5,350,770*l.* Stamps, licences to trade, a poll tax on the lower classes (all considerably raised during the last two years), increase the items of taxes, direct and indirect, to about 35½ millions sterling, collected at an expense of about 2½ millions.

“The State domains, consisting of lands held by peasants on copyhold leases, of forests, mines, and the railway from St. Petersburg to Moscow, yield a gross return of nearly 8 millions; the cost of administration being about a million and a-half.

* The rouble has throughout been converted at the rate of 36*d.*

"The miscellaneous receipts amount to $6\frac{1}{4}$ millions, amongst which we notice nearly half a million derived from the kingdom of Poland as a surplus of its revenue, and constituting, apparently, the contribution of that unfortunate country towards the expenditure of the empire. The country of the Transcaucasus, under the government of the Grand Duke Michael, is more favourably treated, its entire revenue, with the addition of about 26,000*l.*, being locally expended. The provinces and towns supply $3\frac{1}{4}$ millions towards the State expenses.

"Royalties appear for more than two millions, but the charges against them on the other side of the account reduce the income under this head to about 140,000*l.* This includes the post office and telegraph lines. The former inflicts a loss on the country of about 150,000*l.*; the latter merely pay for their management.

"The receipts from Government distilleries, from the sales of stores, &c., which figure for $1\frac{1}{4}$ million, and make up the total of the ordinary revenue (53,191,300*l.*) are exactly balanced by a corresponding charge for administration and production.

"We now come to the expenditure. The items are most plausibly marshalled, and defy all attempts at animadversion. The charges appear so moderate and so indispensable that it is difficult to say were economy could be introduced. The public debt is, after all, only an annual charge of about 9 millions, half of which is referable to foreign loans. The increase under this head since 1860 is about a million.

"The Council of State, the several committees which do the work of a parliament, the three sections of the Emperor's Chancery (of which the third, or secret police office, appears for 18,000*l.*), absorb 180,518*l.*

"The Church gets only 800,000*l.* from the State, of which nearly 600,000*l.* represent the pay of the clergy, augmented, of course by the voluntary contributions of the orthodox.

"Russian revolutionary writers attack chiefly the next item of expenditure,—that of the imperial household and civil list,—which figure for 1,163,316*l.* This charge includes grants to various benevolent institutions and to schools; the management, we believe, of theatres; expenses connected with the bestowal of decorations; and the maintenance of numerous palaces, leaving the sum of 74,250*l.* to be divided between the empress, the heir-apparent, and the younger children of their majesties. The private property of the imperial family is supposed to exceed that of any other reigning house. There is, consequently, a certain suppression of facts here which we cannot omit to notice. The budget does not include the revenue of the imperial appanages, which amounted even in 1859 to 539,973*l.*, out of which 240,845*l.* were paid that year to members of the imperial family. It is to be presumed that these resources are, at all events, not diminished at the present day. But even the addition of this sum to the charge on the budget does not appear an exorbitant grant to the house of Romanoff, composed as it is of so many members, each traditionally entitled to a palace and a court. Nor can the emperor be reproached with the number of palaces and establishments which he keeps up. The form of government which the Russian people still choose to have necessitates the setting up of imperial symbols over the country. Pomp, glitter, and glory are inseparable from the autocratic polity. A reduction of expenditure under this head has, however, been found possible, to the extent of 103,174*l.*, between 1860 and 1864. Indeed it is the only economy apparently introduced since the budgets have been published, all other State charges having steadily increased, owing either to special circumstances, such as the insurrection in Poland, or to the introduction of more accurate accounts.

"The diplomatic and consular services cost little more than 300,000*l.*—the extraordinary disbursements in foreign countries amounting to 32,000*l.* This charge is about 40,000*l.* less than our own Parliamentary grant for the same purpose for 1864-65.

"The army—estimated by the Russian press, in answer to M. Wolowski, at 800,000 effectives—involves a charge of 18 millions on the budget, or about 600,000*l.* more than the military forces of this country. We regret to notice an

increase of nearly 3,000,000*l.* under the head of army expenditure since 1860, irrespective of the extraordinary charges involved by the Polish outbreak, estimated in another part of the budget at nearly 5 millions sterling. The increased expenditure is attributable to the reforms introduced since the Crimean war, not to any augmentation of the forces. The depreciation of the currency, by raising prices, has also necessarily affected the navy estimates. The numerical effective strength of the Russian army, taken even at the highest valuation, will not appear excessive when we consider the vastness of the empire, the length of its frontiers, and the conditions on which Poland, the Caucasus, and other outlying dependencies are held. Garrisons will alone absorb a large proportion of the alleged strength of the army; and when we, moreover, bear in mind the sanitary condition of the Russian troops—the fact that every man passes through a military hospital every year—the Emperor of Russia may well be excused for preserving such an imposing martial array on paper.

“The navy will cost Russia $3\frac{1}{4}$ millions this year, or about 56,000*l.* more than in 1860, shipbuilding appearing for about a million sterling. A further charge of 734,442*l.* is made on account of the Polish insurrection. The combined charges for the military and naval services, independently of the extraordinary war disbursements in Poland, amount to about $21\frac{1}{4}$ millions, or about 7 millions less than this country annually votes for the same purposes. Of course, such a comparison is merely nominal, considering the relative value of money in the two countries. The proceeds of the excise on spirits almost exactly correspond with the charges for the Russian army and navy.

“About nine millions sterling are annually expended by the Minister of Finance in central and local administration; in pensions to widows, &c., 2,298,817*l.*; subventions to public companies, towns, &c., 824,606*l.*; and in the collection of the revenue, 2,826,033*l.* There are certain ‘extraordinary disbursements by the Treasury,’ under the head of ‘Finance Department,’ which we are unable to explain. They probably conceal some secret financial juggling not to be divulged to the public, although probably satisfactorily explained to the council.

“The Administration of the Domains of the State and the charges on them amount to 1,367,800*l.*, out of which a quarter of a million is paid to meritorious or favoured individuals in the service of the Crown. The salaries of the higher functionaries in all the branches of the imperial service are supplemented in certain cases by the grant of rents or ‘*arendas*,’ payable out of the State domains.

“The Home Office, with its numerous staff at the capital, and its provincial officers, absorbs about two millions sterling. There is a charge of 28,161*l.* for the censorship of the press.

“The State disbursements for public instruction fall a little short of a million, more than half of which is expended on universities, lyceums, and gymnasiums. The district, parochial, and primary schools are conducted at an expense of not quite 200,000*l.* The smallness of the expenditure under this head is almost a reproach to the country, for it cannot possibly suffice for the instruction of the children of 70 millions of inhabitants. The charge for education in such a country as Russia, with a vast population just emancipated and emerging into civil life, should be considered one of the most urgent items of State expenditure. A greater portion of the revenue should be devoted to purposes of civilisation, regardless of that revenue being thereby diminished. The ignorant and frequently besotted priests should be replaced by a qualified schoolmaster. If the interference of the State in matters of public instruction is so requisite here, where public and charity schools abound, how much more must it be needed in a country where private initiation has done next to nothing towards educating the masses? We may, however, congratulate the Russian Government on having increased this expenditure by 400,000*l.* since 1860.

“The administration of justice costs something short of a million, or a third more than in 1860. It is to be presumed that this expenditure will be considerably increased next year, when the great legal reform comes into operation, and vests the appointment of the judges in the Crown, instead of allowing them to be elected and paid, as at present, by the assemblies of the nobility.

"Public works necessarily require considerable appropriation of the revenue, and, being a productive expenditure, should not be grudged. As there is nothing Russia wants so much as railways in order to develop her riches, the increase of two millions sterling under the item of public works (provided they have been judiciously and honestly applied) is the best guarantee the Russian Government can offer of a prospective amelioration of their financial position.

"A few other items raise the total of the ordinary expenditure to nearly 53 millions, to which the minister adds an anticipated deficit in the collection of the taxes amounting to 600,000*l.*, and the expenditure of certain Government establishments to the extent of their productions, credited on the other side as revenue. The grand total of the ordinary expenditure of the Russian empire would thus have been 54,557,072*l.*, had not the disaffection in Poland necessitated an increase of the military and naval establishments, and an outlay of 5,607,147*l.*

"In short, the gross ordinary revenue of the Russian empire during the present year is estimated at 53,191,300*l.*, and its gross expenditure at 60,164,219*l.*, showing a deficit of 6,972,919*l.*, which is to be covered by an issue of exchequer bills to the extent of 2,700,000*l.*, and by 4,272,919*l.* of the recent Anglo-Dutch loan.

"The greater portion of the deficit is attributed to the extraordinary charges of the Polish insurrection, leaving only the sum of 1,365,772*l.* as the ordinary excess of expenditure over income. In the study of Russian budgets, nothing is more striking than the comparative immobility of the revenue of such a vast empire, and the regular recurrence of greater or less deficits. It is a most remarkable and significant fact that, from 1845 to 1857 the ordinary revenue of Russia always oscillated between 28½ millions and 34 millions, including the years of the Crimean war, while the recorded expenditure ranged during that period between 31 millions and 78 millions! The aggregate deficits during those years, amounting to the enormous sum of 163 millions sterling, were made up by the issues of bank notes and by loans, to which the present financial distress of the country is attributable.

"The figures for 1844, 1855, and 1856 tell more than words can express:—

	Revenue.	Expenditure.	Deficit.
	£	£	£
1854.....	33,006,000	49,839,632	16,833,632
'55.....	31,029,000	67,086,611	36,057,611
'56.....	31,605,000	77,702,291	36,097,291

"A revenue of 50 millions sterling from such a wide-spread empire, which boasts of 70 millions of subjects, appears insignificant in the extreme; and yet, from its non-elasticity, we must argue that the burden is as great as the country can possibly bear. The fact probably is, that the smallness of the burden is more apparent than real, and that the people pay a considerable amount of taxation in the way of presents and bribes to officials. At the same time, the Imperial revenue defrays many expenses which in other countries are left to local resources. The taxation for local purposes, raised from the agricultural classes, has hitherto been about 4*d.* a-head; but about 2*s.* 3*d.* a-head in addition is paid by those classes in the shape of contributions in kind (horses, labour, and quartering of troops). The Imperial and local taxation on the male, rural, taxable population is estimated in a Russian official report at 5*s.* a-head. The peasantry, moreover, complain loudly of the expense of their newly-bestowed self-government. They now elect and pay their own judges, parish clerks, and other officers, and maintain their own poor, besides expending considerable sums in corn brandy for the purpose of influencing the more venal members of their communal assemblies.

"It seems, therefore, a hopeless task to balance a Russian budget, even on paper, and the undertaking would be still more arduous in reality, were it not for

an institution known as the State Bank. To it the Minister of Finance resorts in his extremities, appropriating with a high hand the savings of the nation to the pressing necessities of the exchequer. The practice of issuing bank notes *ad libitum* we sincerely believe to have been abandoned, although a re-issue of a certain amount of notes exchanged at the bank for specie, with the ostensible object of reducing the superabundant paper currency, is known to have been made for some time before the specie payments were again suspended last year. Public deposits at the bank, to the extent of about 27 millions sterling, placed there at the rate of 2 and 3 per cent., have irrecoverably gone to fill up avowed and unavowed gaps in previous budgets. About a hundred millions sterling in credit notes are now represented by only ten millions in specie. The Government has, moreover, considerable liabilities, alleged to be secured on real property, quite irrespective of foreign and internal loans.

“It is not a matter of surprise that, considering all these circumstances, M. Wolowski should have drawn such a dismal picture of Russian solvency, and incurred the reproachful insinuation of Polish proclivities. The difficulties, indeed, appear for the present inextricable. The taxation of the country is evidently incapable of any immediate or sufficient expansion, except, perhaps, in the direction of classes of society equally amenable to the payment of direct taxes, now almost exclusively raised from the labouring and commercial population. Nor is it easier to suggest a reduction of the expenditure, which, if honestly stated (as we trust it is), does not in any way appear prodigal.

“When the great reforms which the present Emperor has initiated shall have borne their fruits; if the country, in consequence of productive outlays now being made, should be raised to a higher state of prosperity; if the Government, abandoning a fallacious and ruinous system of finance, permits the accumulation of capital at private banks throughout the country and the consequent introduction of the credit system of Western Europe; when it renounces the hope of keeping the paper rouble at par, and consolidates its inconvertible currency at a fixed depreciation, now amounting to 13 per cent.; when the Emperor Alexander shall have done all this, and when, above all, he shall have admitted the representatives of his heterogeneous people to a participation in government, his Majesty will then be justified in considering himself truly powerful and independent of the Western Powers. But, until then, every sincere and practical economist will advise the Russian Government to be careful of its credit in the money markets of Europe, to continue the fulfilment of its many obligations abroad with its present almost proverbial punctuality, and by no means to disturb still more by a crooked foreign policy the confidence of statesmen and capitalists, somewhat shaken by recent financial disclosures and controversies. Russia will certainly require credit for many a year to come, and can only have it on condition of political and financial good behaviour.

Budget of the Russian Empire for the Year 1864.

I. ORDINARY REVENUE.

A. Taxes—	£	£
Direct	6,809,915	
Indirect (Excise, 21,335,300 <i>l.</i> ;* Customs, 5,350,770 <i>l.</i>)	26,686,070	
Duties, stamps, &c.....	1,997,847	
		35,493,832
B. Royalties—		
Mines	375,162	
Mint.....	375,976	
Post office	1,155,595	
Telegraphs	294,733	
		2,201,466

* Spirits, 19,170,773*l.*

C. State domains and property—	£	£
Rents from Crown lands held by peasants	4,445,131	
Railway, Moscow to St. Petersburg	1,437,058	
Forests	515,516	
Miscellaneous (lands, mines, &c.)	1,587,015	
	<hr/>	7,984,720
D. Miscellaneous receipts—		
Repayment of loans made by Government	699,826	
Contributions to Treasury by Town Corporations } State charges on provinces, &c. }	3,230,327	
Surplus of revenue of the Kingdom of Poland	472,500	
Revenue of the Transcaucasus	518,046	
Miscellaneous (produce of schools of agriculture, } printing, fines, &c.) }	1,335,555	
	<hr/>	6,256,254
E. Receipts from Government establishments, &c.—		
Sale of spirits at Government distilleries	132,450	
„ forage, stores	254,651	
Reimbursement of divers expenses	663,067	
Miscellaneous	204,860	
	<hr/>	1,255,028
Total ordinary revenue	—	53,191,300

II. EXTRAORDINARY REVENUE.

A. Exchequer bills	2,700,000	
B. Anglo-Dutch loan, 1864	4,272,919	
	<hr/>	6,972,919
Total gross revenue	—	60,164,219

I. ORDINARY EXPENDITURE.

A. Public debt—		
Extinction and interest of foreign loans	4,633,420	
„ internal „	4,312,249	
	<hr/>	8,945,669
B. Expenses of Superior State Department	—	180,518
C. Church (pay of clergy, 599,178 <i>l.</i>)	—	801,291
D. Imperial household and civil list	—	1,163,316
E. Foreign Office, diplomatic and consular service	—	314,109
F. Army—		
Pay	3,279,894	
Rations	4,360,346	
Forage	2,218,123	
Clothing	1,987,173	
Miscellaneous	(?) 6,147,069	
	<hr/>	17,992,605
G. Navy—		
Pay	273,994	
Victualling	89,937	
Clothing	94,532	
Shipbuilding	960,919	
Miscellaneous	1,833,268	
	<hr/>	3,252,650

H.	Finance Department—		£	£
	Pensions to widows, orphans, &c.	2,298,817		
	Subventions to companies, towns, &c.	824,406		
	Construction of factories for casting guns	117,300		
	Compensations : to Denmark for Sound Dues, to } Poland for abolition of custom houses, &c. }	630,415		
	Extraordinary disbursements of treasury	600,000		
	" " in provinces	551,848		
	Central and local administration of finance	657,858		
	Miscellaneous	260,353		
		<hr/>		
		5,940,997		
	Expenses of collecting revenue—			
	Direct taxes.....	32,522		
	Excise on spirits.....	1,385,669		
	„ tobacco, salt, and sugar	218,962		
	Customs	706,555		
	Duties, stamps, &c.	22,914		
	Mint, mine inspection, &c.	459,412		
		<hr/>		
		2,826,033		
		<hr/>		8,767,030
I.	Department of Domains—			
	Central and local administration	543,087		
	Grants of rents to servants of the Crown	251,580		
	Forests, farms, surveys, &c.	573,213		
		<hr/>		1,367,880
J.	Committee of Southern Colonies	—		26,902
K.	Home Office—			
	Central administration	89,068		
	Censorship of press	28,161		
	Provincial administration	1,069,813		
	Maintenance of clergy of foreign persuasions	102,404		
	Divers	529,384		
		<hr/>		1,818,835
L.	Public instruction—			
	Central and district administration	58,597		
	Universities, lyceums, and gymnasia	563,164		
	District, parochial, primary, and other schools	194,070		
	Grants, aid to professors, printing, &c.	120,772		
		<hr/>		936,603
M.	Public works—			
	Central and local administration	495,575		
	Water communication	338,984		
	Roads	556,746		
	Telegraphs	49,240		
	Buildings.....	201,673		
	Guarantees to railway companies	975,000		
	Working of line, St. Petersburg to Moscow	845,750		
	„ and extension of telegraphs	294,733		
	Expense of levying tolls, &c.	16,515		
		<hr/>		3,774,416
N.	Post Office, including postal stations, horses, &c.....	—		1,706,150

O. Justice—

Senate and central administration	196,232	
Provincial and district courts, magistrates	644,831	
Law college and divers	132,387	
		973,450

P. Comptroller of Empire, central administration — 48,938

Q. Imperial studs — 89,225

R. Civil administration of Transcaucasus — 542,457

Total ordinary expenditure — 52,702,044

Anticipated deficit in collection of taxes..... 600,000

Expenditure for Government establishments 1,255,028

1,855,028

54,557,072

II. EXTRAORDINARY EXPENDITURE ON ACCOUNT OF POLISH INSURRECTION.

Army	4,872,705	
Navy	734,442	
		5,607,147

Total expenditure — 60,164,219

V.—Disease in the Army.

THE subjoined return has been laid before the House of Commons by the Secretary of State for War. The record extends over the year ended with December last; it takes account of all the soldiers quartered in the United Kingdom, amounting, on the average, to 78,044 of all arms. The sickness-rates, as shown in this table, are important standards of comparison for similar statistics to be gathered when the "Contagious Diseases Prevention Act, 1864," shall have had sufficient time to come into full and effective operation.

Corps.	Average Number of Soldiers Quartered in the United Kingdom; Year ended 31st December, 1863.		Total Number of Days' Absence from Duty on account of Illness during 1863.				Percentage of Soldiers Absent from Duty on account of Illness during 1863.			
			Ordinary Illness.		Particular Illness.		Ordinary Illness.		Particular Illness.	
	Married.	Single.	Married.	Single.	Married.	Single.	Married.	Single.	Married.	Single.
Cavalry	1,547	10,040	7,891	101,682	636	81,564	1.40	2.77	.11	2.23
Artillery	3,155	12,931	10,220	138,475	229	98,225	.89	2.93	.02	2.08
Engineers	561	1,770	1,257	15,923	—	13,301	.61	2.47	—	2.06
Military Train	193	1,268	615	11,134	—	12,283	.87	2.41	—	2.65
Foot Guards	483	3,827	2,336	47,263	476	38,061	1.32	3.38	.27	2.72
Infantry of the Line	4,610	36,686	18,311	396,348	970	247,833	1.09	2.96	.06	1.85
Army Hospital Corps	267	352	881	2,858	115	610	.90	2.22	.12	.48
Commissariat Staff } Corps	59	295	187	1,712	112	2,923	.87	1.59	.52	2.71
Total	10,875	67,169	41,698	715,395	2,538	494,800	1.05	2.92	.06	2.02

MARRIAGES, BIRTHS, AND DEATHS IN GREAT BRITAIN.

No. I.—ENGLAND AND WALES.

MARRIAGES IN THE QUARTER ENDED 31ST MARCH, 1864;
AND BIRTHS AND DEATHS IN THE QUARTER ENDED
30TH JUNE, 1864.

THIS Return comprises the BIRTHS and DEATHS registered by 2,200 Registrars in all the districts of England during the spring quarter that ended on June 30th, 1864; and the MARRIAGES in 12,670 churches or chapels, about 5,022 registered places of worship unconnected with the Established Church, and 641 Superintendent Registrars' offices, in the quarter that ended on March 31st, 1864.

The return of marriages is a very satisfactory proof that the bulk of the population was in prosperous circumstances. In the first quarter of the year the marriage-rate is always lower than in any of the three subsequent quarters; but within the range of comparison which the tables supply, viz., the results of the last ten years, there is no instance of a winter quarter furnishing as high a marriage-rate as that of the March quarter in the present year. In the spring quarter the birth-rate was well maintained, although it has been occasionally higher in the same season. The rate of mortality was above the average for the three spring months.

ENGLAND :—MARRIAGES, BIRTHS, and DEATHS, returned in the Years
1858-64, and in the QUARTERS of those Years.

Calendar YEARS, 1858-64 :—Numbers.

Years	'64.	'63.	'62.	'61.	'60.	'59.	'58.
Marriages No.	—	173,388	164,030	163,706	170,156	167,723	156,070
Births..... ,,	—	729,399	712,684	696,406	684,048	689,881	655,481
Deaths..... ,,	—	475,582	436,566	435,114	422,721	440,781	449,656

QUARTERS of each Calendar Year, 1858-64.

(I.) MARRIAGES :—Numbers.

Qrs. ended last day of	'64.	'63.	'62.	'61.	'60.	'59.	'58.
March .....No.	37,948	35,454	33,953	33,274	35,150	35,382	29,918
June ,,	—	44,058	40,853	42,012	43,777	42,042	39,890
Septmbr..... ,,	—	41,902	40,600	39,884	40,541	39,803	38,599
Decmbr. ,,	—	51,974	48,624	48,536	50,688	50,496	47,663

QUARTERS of each Calendar Year, 1858-64.

(II.) BIRTHS:—Numbers.

<i>Qrs. ended last day of</i>	'64.	'63.	'62.	'61.	'60.	'59.	'58.
March .....No.	192,926	186,653	181,990	172,933	183,180	175,532	170,959
June „	188,641	189,611	185,554	184,820	174,028	175,864	169,115
Septmbr. „	—	173,125	172,709	172,033	164,121	168,394	157,445
Decmbr. „	—	180,010	172,431	166,620	162,719	170,091	157,962

(III.) DEATHS:—Numbers.

<i>Qrs. ended last day of</i>	'64.	'63.	'62.	'61.	'60.	'59.	'58.
March .....No.	143,030	128,524	122,019	121,215	122,617	121,580	125,819
June „	116,899	118,375	107,392	107,558	110,869	105,631	107,142
Septmbr. „	—	112,384	92,381	101,232	86,312	104,216	98,142
Decmbr. „	—	116,299	114,774	105,109	102,923	109,354	118,553

MARRIAGES.—The marriages in the March quarter numbered 37,948. The acceleration of the marriage-rate attained in that period appears by comparing corresponding quarters in 1861-64, in which, using round numbers and a thousand as the unit, the figures run thus: 33, 34, 35, and 38. There was a decided decrease in Devonshire and Cornwall.

BIRTHS.—The birth-rate in the spring quarter (ending 30th June) was 3·647 per cent. per annum, against an average of 3·611. The excess, which is not great, is due almost wholly to the returns of Yorkshire, the northern counties, and Wales. In the eastern counties and the south western, to which population is not drawn by a power of attraction equal to that which the great mining districts supply, the birth-rate was not as high as it had been in the two previous corresponding quarters.

The total number of births was 188,641. This is less by about a thousand than the number in the same quarter of 1863. In London 25,000 children were born. In the counties of the cotton manufacture, Lancashire and Cheshire, where about 30,000 were born, the birth-rate was higher. But the births were not numerous in those counties, if they are compared with former results; and West Derby alone in Lancashire gives indication by its returns of rapid growth in its population.

INCREASE OF POPULATION.—The deaths in the quarter were 116,899; and as the births in the same time were 188,641, there was an excess in the latter amounting to 71,742, which represents the natural increase of population. Immigration of unknown amount would modify the effect of emigration; but the return of the Emigration Commissioners shows that nearly 20,000 persons of English origin left their native shores for distant settlements in the quarter that ended 30th June. Out of that number nearly 12,000 went to the United States, and 5,000 to the Australian colonies.

The number of emigrants of all nationalities was 86,783, of whom about 66,000, chiefly Irish, were bound to the United States. The emigration to that part of America has not before been so great in the June quarter since 1854. Almost nine-tenths of the Irish emigrants left for the United States.

ENGLAND:—*Annual Rates per Cent. of PERSONS MARRIED, BIRTHS, and DEATHS, during the YEARS 1858-64, and the QUARTERS of those Years.*

Calendar YEARS, 1858-64:—General Percentage Results.

YEARS	'64.	Mean '54-'63.	'63.	'62.	'61.	'60.	'59.	'58.
Estmtd. Popln. of England in thousands in middle of each Year....	20,772	—	20,554	20,336	20,119	19,903	19,687	19,471
Persons Married Per ct.	—	1·661	1·688	1·614	1·628	1·710	1·704	1·604
Births „	—	3·450	3·549	3·504	3·461	3·437	3·504	3·366
Deaths „	—	2·214	2·314	2·147	2·163	2·124	2·239	2·309

QUARTERS of each Calendar Year, 1858-64.

(I.) PERSONS MARRIED:—Percentages.

<i>Qrs. ended last day of</i>	'64.	Mean '54-'63.	'63.	'62.	'61.	'60.	'59.	'58.
March....Per ct.	1·472	1·379	1·404	1·360	1·346	1·422	1·464	1·252
June..... „	—	1·689	1·722	1·614	1·678	1·766	1·716	1·646
Septmbr. „	—	1·597	1·616	1·582	1·570	1·614	1·602	1·570
Decmbr. „	—	1·964	1·998	1·890	1·906	2·012	2·026	1·934

(II.) BIRTHS:—Percentages.

<i>Qrs. ended last day of</i>	'64.	Mean '54-'63.	'63.	'62.	'61.	'60.	'59.	'58.
March....Per ct.	3·740	3·605	3·698	3·644	3·500	3·707	3·631	3·576
June „	3·647	3·611	3·705	3·665	3·690	3·512	3·588	3·488
Septmbr. „	—	3·309	3·337	3·365	3·388	3·267	3·389	3·204
Decmbr. „	—	3·273	3·461	3·350	3·272	3·230	3·414	3·205

(III.) DEATHS:—Percentages.

<i>Qrs. ended last day of</i>	'64.	Mean '54-'63.	'63.	'62.	'61.	'60.	'59.	'58.
March....Per ct.	2·773	2·490	2·546	2·443	2·453	2·481	2·515	2·631
June..... „	2·260	2·187	2·313	2·121	2·147	2·237	2·155	2·210
Septmbr. „	—	2·000	2·166	1·800	1·994	1·718	2·097	1·997
Decmbr. „	—	2·180	2·236	2·230	2·064	2·043	2·195	2·406

PRICES, PAUPERISM, AND THE WEATHER.—Wheat was unusually cheap. Its average price in the three months was 39s. 7d. per quarter. In the corresponding period of 1862 it was 56s. 8d.; in that of 1863 it was 46s. 2d. The mean of the highest and lowest prices of beef as sold by the carcase in Leadenhall and Newgate was 5½d. per lb., and the same as in the June quarter of last year. Of mutton the mean price was 6½d., being higher than in the same season of 1862-63. The best potatoes were sold from 2l. to 3l. per ton in Southwark. The price was less than half of that for which they had been obtained in the spring of last year, and still lower in proportion to the price of 1862. The working classes enjoyed cheap markets for supplying themselves with the chief necessities of life.

CONSOLS, PROVISIONS, PAUPERISM, and TEMPERATURE, in each of the Nine
QUARTERS ended 30th June, 1864.

1	2	3	4		5	6	7		8	9
Quarters ending	Average Price of Consols (for Money).	Average Price of Wheat per Quarter in England and Wales.	Average Prices of Meat per lb. at Leadenhall and Newgate Markets (by the Carcase), with the <i>Mean</i> Prices.		Average Prices of Potatoes (York Regents) per Ton at Waterside Market, Southwark.	Pauperism.		Mean Tem- pera- ture.		
			Beef.	Mutton.		Quarterly Average of the Number of Paupers relieved on the <i>last day</i> of each week.	In-door.		Out-door.	
1862	£	s. d.	d. d. d.	d. d. d.	s. s. s.					
30 June	93 ⁶ / ₈	56 8	4—6 5	5—7 6	180—200 190	127,863	781,858	53·3		
30 Sept.	93 ² / ₈	56 10	4 ¹ / ₄ —6 ¹ / ₄ 5 ¹ / ₄	5 ¹ / ₄ —7 6 ¹ / ₈	100—130 115	119,592	789,914	58·7		
31 Dec.	93 ⁵ / ₈	48 2	4—6 ³ / ₄ 5 ¹ / ₈	5 ¹ / ₄ —6 ³ / ₄ 6	90—110 100	132,663	907,493	45·0		
1863										
31 Mar.	92 ⁴ / ₈	46 7	4—6 ¹ / ₄ 5 ¹ / ₈	5—7 6	120—130 125	143,661	948,212	42·6		
30 June	93 ¹ / ₈	46 2	4 ¹ / ₄ —6 ¹ / ₄ 5 ¹ / ₄	4 ³ / ₄ —6 ³ / ₄ 5 ³ / ₄	110—130 120	127,852	879,241	53·0		
30 Sept.	93	45 7	4 ¹ / ₂ —6 ¹ / ₄ 5 ³ / ₈	4 ³ / ₄ —6 ³ / ₄ 5 ³ / ₄	70—105 87	120,189	819,795	58·8		
31 Dec.	92 ⁷ / ₈	40 6	4—6 ¹ / ₄ 5 ¹ / ₈	5—7 6	60—80 70	130,072	804,941	46·8		
1864										
31 Mar.	91	40 4	4 ¹ / ₂ —6 ¹ / ₂ 5 ¹ / ₂	5 ¹ / ₂ —7 6 ¹ / ₄	55—70 62	139,606	855,728	37·9		
30 June	91 ⁴ / ₈	39 7	4 ¹ / ₄ —6 ¹ / ₄ 5 ¹ / ₄	5 ¹ / ₄ —7 6 ¹ / ₈	40—60 50	122,717	785,825	53·1		

The tables of pauperism exhibit a decline. The quarterly average numbers of poor persons relieved on the last day of each week were as follows:—

June quarter, 1862	.....	In-door,	127,863	.....	Out-door,	781,858
„	’63	„	127,852	.....	„	879,241
„	’64	„	122,717	.....	„	785,825

After cold and changeable weather at the beginning of the quarter, a warm period set in on the 9th April, and continued for forty-four days with but little

interruption. From the close of that period (May 23rd) till the end of June, with the exception of a few days, the weather was cold; and the average defect of mean daily temperature during this last period, consisting of 39 days, was more than two degrees. At the beginning of May rain fell frequently; the cereal crops improved and looked healthy. In June the wind blew from the east; there was a deficiency of rain, and generally the weather was not good for agricultural purposes. The degree of humidity in the quarter was 73, which is four below the average. The air was uniformly dry, for the humidity was below its average in each of the three months.

The mean temperature of the air at Greenwich was 53.1° , which is above the average. In April and May it was in excess; in June it was in defect.

The fall of rain was less than the average in each month, and the whole amount did not exceed 3.5 inches.

DEATHS; AND THE STATE OF THE PUBLIC HEALTH.—The deaths which were registered in the quarter that ended on June 30th amounted to 116,899. This number is above the average of the deaths in the months of April, May, and June; but it is less than the number of deaths which were registered in the corresponding quarter of the previous year, and less by 26,131 than the deaths in the three first fatal winter months of this year. Then 1,572 deaths were registered daily; in the present quarter the daily deaths have been 1,284. The mortality has been at the rate of 2.260 in 100 living, or .073 above the average of the spring quarters of the previous ten years. The mortality of the town populations has been at the rate of 2.369, and of the country populations 2.110 per cent.: thus the towns lost 18,392 lives, and the country 10,000 lives, in excess of the deaths which would have been registered had the mortality been at the rate prevailing in the least unhealthy districts of England and Wales.

ANNUAL RATE of MORTALITY *per Cent.* in TOWN and COUNTRY DISTRICTS of ENGLAND in each Quarter of the Years 1864-62.

	Area in Statute Acres.	Population Enumerated.		Quarters ending	Annual Rate of Mortality per Cent. in each Quarter of the Years			
		1851.	1861.		1864.	Mean '54-63.	1863.	1862.
142 Districts, and 56 Sub-districts, comprising the Chief Towns	3,287,151	9,155,964	10,930,841	{ March	2.974	2.678	2.705	2.655
				{ June...	2.369	2.332	2.478	2.267
				{ Sept. ...	—	2.253	2.404	1.984
				{ Dec.	—	2.441	2.462	2.525
				Year	—	2.426	2.512	2.358
the remaining Districts and Sub- districts of Eng- land and Wales, comprising chiefly Small Towns and Country Parishes }	34,037,732	8,771,645	9,135,383	Year	—	1.974	2.064	1.890
				{ March	2.508	2.280	2.343	2.184
				{ June...	2.110	2.023	2.102	1.940
				{ Sept. ...	—	1.713	1.864	1.572
				{ Dec.	—	1.880	1.946	1.864

Note.—The three months January, February, March, contain 90, in leap year 91 days; the three months April, May, June, 91 days; each of the last two quarters of the year 92 days. For this equality a correction has been made in the calculations, also for the difference between 365 and 365.25 days, and 366 and 365.25 days in leap year.

As a general rule the three spring months April, May, June are healthier than winter, and somewhat less healthy than the summer in ordinary years. They express very closely the average mortality of the year. Thus the average annual mortality per cent. in ten years (1854-63) was 2·214, and in the ten springs of those years 2·187; it was less in the spring quarters by ·027.

Average Annual Rate of Mortality in the Eleven Divisions of England in the Ten Years 1851-60, and in the Winter and Spring Quarters of 1864.

Divisions.	Average Annual Rate of Mortality in the		
	Ten Years, 1851-60.	Winter Quarter, 1864.	Spring Quarter, 1864.
I. London	23·63	30·88	23·53
II. South-Eastern counties	19·55	24·18	19·41
III. South Midland „	20·44	26·53	21·61
IV. Eastern counties	20·58	24·51	21·25
V. South-Western counties	20·01	25·97	20·96
VI. West Midland „	22·35	27·57	22·32
VII. North Midland „	21·10	25·84	21·45
VIII. North-Western „	25·51	30·97	24·76
IX. Yorkshire	23·09	28·31	24·55
X. Northern counties	21·99	25·18	21·95
XI. Monmouthshire and Wales.....	21·28	26·28	22·97

If we divide England and Wales into eleven great divisions, their prevailing mortality is found to differ. The country south of the Thames is the healthiest, and in general the deaths do not exceed 20 in 1,000. Kent, Surrey, Sussex, Hampshire, and Berkshire constitute the south eastern division, where the mortality has been below its ordinary favourable average; for the annual rate prevailing in the quarter did not exceed 19·41 per 1,000. Yet in some districts of Kent the deaths exceeded those in the corresponding quarters of the two previous years; this was the case in Bromley, Dartford, Tunbridge, East Ashford, Eastry, and Dover. Scarlatina prevailed in Maidstone. Hampshire and Berkshire were healthy.

The mortality of the south-western division has been at the rate of 20·96, which is considerably higher than its average. The great epidemic of scarlatina which prevailed in England for some years subsided in 1861, but broke out again in 1862, and has since prevailed in various parts of the country with severity. Wiltshire and Somersetshire, and especially the districts around Bath and Bristol, continue still to experience its inflictions: the mortality was considerably above their average in Clifton, Bath, Clutton, and Wellington, Chard, and Yeovil. These important districts might probably learn something useful from their venerable neighbour Salisbury, where the mortality continues low, and justifies their sanguine expectations of its sanitary reformers.

The mortality of the eastern and of the south midland division was above the average; and among the unhealthy districts Uxbridge, Amersham, Eton, Bedford, Luton, and Wisbech may be named.

The people of the west midland counties died off at the rate of 22·32 in 1,000: and this is slightly below their average rate.

The north midland rate was 21·45; which is higher than its average.

The mortality of the north-western division including Cheshire and Lancashire, was 24·76; which is ·75 below its annual average mortality in the preceding ten years. The people of these counties might be rendered as healthy as the people of any other counties, by the application of the legitimate machinery for the purpose.

While the mortality of Lancashire is decreasing the mortality of Yorkshire is rising, and in the last spring months the people of the greatest county of England, which has often taken the lead of other counties on great occasions, very nearly surpassed Lancashire in its rate of destruction. The people died off at the rate of 24·55 in 1,000; which was 1·46 above its high average rate. It would seem that no earnest efforts are made to secure the blessings of health in the prosperous towns of Yorkshire, where there is no lack of medical and engineering skill, and still less lack of enterprize or public spirit. The same temper which has exposed their valleys to the inundation of badly constructed reservoirs has left their towns exposed to the deadlier ravages of fevers, and of zymotic diseases of all forms. It is time that the men of Yorkshire should awake from their slumbers, when the tide of mortality is rising so rapidly and so threateningly.

It is a singular circumstance, that the mortality often augments with the increased prosperity of a district; and this is curiously illustrated by Ulverston, a romantic district extending from Morecambe Bay to Lake Windermere. Ulverston, in the ten years, 1841-50, was one of the healthiest districts of England; the mortality did not exceed 18 in 1,000. A change took place, and in the ten years, 1851-60, the mortality rose to 20 in 1,000. The deaths in the last quarter were considerably above the average of previous years, caused, says one of the registrars, "in part by the increase of the population, and in part by the prevalence of scarlatina and measles." He adds, "but there is no distress; work is plentiful, wages good, and provisions cheap. Labourers are earning 3s. 6d. a-day; artisans 4s. 3d. and upwards."

The population of many of the townships and parishes of the Ulverston district, at the feet of its fells, and round the shores of its meres, is stationary, and in some instances has declined: it is an old iron district, which has seen its works decay when coal came into use for smelting, but of late a pure hæmatite ore has been discovered in the carboniferous limestone of Dalton-in-Furness, for which there is a great demand. The population of the parish rose from 4,683 to 9,152 in the interval of the two last censuses, and, with the parishes in its vicinity, gave the increase which raised the population of Ulverston district from 30,556 in 1851 to 35,738 in 1861.

The mortality of the district of Ulverston, exclusive of Dalton, in the two last quarters, was at the rate of 26 and 23 in 1,000; while that of Dalton was at the rate of 42 and 31; and it is in this sub-district that the spectacle is presented of "work plentiful, wages good, provisions cheap," and "the prevalence of destructive epidemics." This coincidence is reproduced over and over again. And it must not be supposed on that account that work, good wages, and cheap provisions are in themselves bad things; for they are as salutary as they are attractive to the masses of mankind. But our industrial armies are cut down by the camp diseases which are generated by the inadequate house accommodation, and by the want of sanitary arrangements, which are never carried out in the neighbourhood of new works.

Nearly all the English watering places are on good sites, and have many advantages over those abroad, and there can be no doubt that ultimately England will be the resort of foreigners who are in search of health, when we find a mortality-rate per 1,000 as low as 15 in the Isle of Wight, 16 in Newton Abbot including Torquay, 17 in Cheltenham, 17 in Eastbourne, 18 in Worthing, 18 in Barnstaple, including Ilfracombe, 18 in Mutford, including Lowestoft.

The Brighton rate of mortality is 20 in 1,000; but there is good reason for believing that it might be reduced to as low a rate as prevails at Cheltenham or Worthing, at a cost which would certainly be returned by its surer tenure of the public favour. Some of the seaside towns are draining their houses, and for this they deserve applause; but it appears to be very unreasonable to throw into the waters of the sea where visitors bathe the offensive matters which would fertilize the disinfecting chalk soils in the surrounding fields.

Why is the mortality of the Isle of Thanet, including Ramsgate and Margate, still 23? Why is the mortality of Hastings 24? Why is the mortality of Clifton 24? Why is it in Yarmouth at the rate of 25 in 1,000?

ENGLAND: — MARRIAGES *Registered in Quarters ended 31st March, 1864-62; and BIRTHS and DEATHS in Quarters ended 30th June, 1864-62.*

1	2	3	4	5	6
DIVISIONS. (England and Wales.)	AREA in Statute Acres.	POPULATION, 1861. (Persons.)	MARRIAGES in Quarters ended 31st March,		
			'64.	'63.	'62.
ENGLD. & WALES.... Totals	37,324,883	No. 20,066,224	No. 37,948	No. 35,454	No. 33,953
I. London	77,997	2,803,989	6,591	6,226	5,737
II. South-Eastern	4,065,935	1,847,661	2,807	2,759	2,571
III. South Midland	3,201,290	1,295,497	1,660	1,594	1,641
IV. Eastern	3,214,099	1,142,580	1,555	1,451	1,437
V. South-Western	4,993,660	1,835,714	3,139	3,171	3,082
VI. West Midland	3,865,332	2,436,568	4,686	4,129	4,016
VII. North Midland	3,540,797	1,288,928	2,113	1,816	1,798
VIII. North-Western	2,000,227	2,935,540	6,234	6,060	5,708
IX. Yorkshire	3,654,636	2,015,541	4,454	3,926	3,833
X. Northern	3,492,322	1,151,372	2,398	2,278	2,123
XI. Monmthsh. & Wales	5,218,588	1,312,834	2,311	2,044	2,007

7	8	9	10	11	12	13
DIVISIONS. (England and Wales.)	BIRTHS in Quarters ended 30th June,			DEATHS in Quarters ended 30th June,		
	'64.	'63.	'62.	'64.	'63.	'62.
ENGLD. & WALES.... Totals	No. 188,641	No. 189,611	No. 185,554	No. 116,899	No. 118,375	No. 107,392
I. London	25,014	25,766	24,692	17,346	17,417	15,654
II. South-Eastern	15,508	15,307	14,825	9,300	9,311	8,138
III. South Midland	11,306	11,528	11,203	7,088	6,903	6,176
IV. Eastern	9,752	10,067	9,768	6,100	6,362	5,456
V. South-Western	15,238	15,706	15,301	9,645	10,040	8,799
VI. West Midland	23,841	24,113	23,443	14,126	13,966	12,456
VII. North Midland	11,802	11,956	11,665	7,019	6,994	6,533
VIII. North-Western	30,172	30,004	30,669	19,071	19,467	18,024
IX. Yorkshire	20,753	20,450	19,773	12,802	13,339	11,821
X. Northern	12,457	12,362	12,069	6,646	7,096	6,815
XI. Monmthsh. & Wales	12,798	12,352	12,146	7,756	7,480	7,520

REMARKS ON THE WEATHER

DURING THE QUARTER ENDING 30TH JUNE, 1864.

By JAMES GLAISHER, ESQ., F.R.S., &c., *Sec. of the British Meteorological Society.*

The quarter ending March closed with cold and changeable weather, which continued to the 8th of April; the average daily deficiency of temperature from March 16th to April 8th was $1^{\circ}8$. A warm period set in on the 9th, and continued with slight exception to May 22nd. The average daily excess of temperature for these 44 days was $3\frac{1}{4}^{\circ}$ nearly. From May 23rd to the end of the quarter the weather was cold, with the exception of the few days between June 6th and 10th, and the deficiency for the 39 days, ending June 30th, amounted to $2\frac{1}{2}^{\circ}$ nearly daily.

At the beginning of April the weather was cold and bleak; but little progress could be made with field work. On the 9th of April the change in the weather was marked, and farmers took advantage of the change, and at the end of the month all over the country the crops were reported as being in a good state.

At the beginning of May rain fell frequently, and the cereal crops improved, and everywhere wore a healthy appearance. The change in the weather from heat to cold on the 23rd, with frosts at night during the last week in May, somewhat checked the good appearance of those crops, but upon the whole they were satisfactory.

During the month of June the wind was from the east. It was too cold; there was a deficiency of rain; the weather was not generally good for agricultural purposes, and different reports from different parts of the country were received, some of them not good, and upon the whole the probable yield of this year's cereal crops would seem to fall short of that of last year's, and it will be later in the year before it can be gathered.

The mean temperature of April was $48^{\circ}2$, being $1^{\circ}7$ above the average of the preceding 23 years, and $0^{\circ}9$ colder than in 1863.

The mean temperature of May was $53^{\circ}8$, being $0^{\circ}9$ above the average of 23 years. It was $1^{\circ}8$ warmer than in 1863, but $1^{\circ}6$ colder than in 1862.

The mean temperature of June was $57^{\circ}4$, being $1^{\circ}7$ below the average of 23 years, $0^{\circ}7$ below that of 1863, but higher than in the preceding year.

The temperature of the air increased from March to April by 4° at southern stations, gradually getting larger, proceeding northwards, where the increase was 8° or 9° . In May the temperature was 5° or 6° higher generally than in April, excepting in extreme northern stations, where the increase was much smaller. At Alnwick the increase was less than $2\frac{1}{2}^{\circ}$. In June, at stations near the sea, the temperature was very nearly the same as in May; at inland and midland stations there was an increase from May of 3° or 4° . At elevated places inland the increase from May to June was very small.

The mean high day temperature for the months of April, May, and June were $58^{\circ}3$, $64^{\circ}8$, and $69^{\circ}5$, being $1^{\circ}3$ above, $0^{\circ}3$ below, and $1^{\circ}4$ below their respective averages.

The mean low night temperature for these three months were 40° , $44^{\circ}9$, and $49^{\circ}1$, being $1^{\circ}3$ above, $0^{\circ}7$ below, and $1^{\circ}1$ below their averages respectively,

Therefore both the days and nights were warm in April, and cold in May and June.

The mean temperature of the dew point was $0^{\circ}2$ below its average in April, was the same as its average in May, and $2^{\circ}1$ below it in June.

The degree of humidity was very uniform and always its average; the mean of the quarter was 73, complete saturation being represented by 100.

The pressure of the atmosphere was in excess in the months of April and May; in the former to less than 0.2 inch, and in the latter to less than 0.1 inch; in June it scarcely differed from its average value. The pressure of the atmosphere increased by 0.3 inch, or 0.4 inch from March to April at all places; decreased from April to May by quantities less than 0.1 inch everywhere, excepting Norwich, where it was just 0.1 inch; but this value is not confirmed by Diss, Wisbeach, or Holkham stations in the same locality.

The fall of rain was in defect in each month.

The mean temperature of the air at Greenwich in the three months ending May, constituting the three spring months, was $47^{\circ}8$, being $1^{\circ}3$ above the average of the preceding 93 years.

1864. Months.	Temperature of										Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.	
	Air.			Evaporation.		Dew Point.		Air— Daily Range.		Water of the Thames.				
	Mean.	Diff. from Aver- age of 93 Years.	Diff. from Aver- age of 23 Years.	Mean.	Diff. from Aver- age of 23 Years.	Mean.	Diff. from Aver- age of 23 Years.	Mean.	Diff. from Aver- age of 23 Years.		Mean.	Diff. from Aver- age of 23 Years.	Mean.	Diff. from Aver- age of 23 Years.
April	48.2	+2.4	+1.7	44.3	+0.8	40.0	-0.2	18.3	+0.1	50.4	.248	-.002	2.9	0.0
May	53.8	+1.3	+0.9	49.7	+0.5	45.6	0.0	19.9	-0.4	58.6	.306	+0.003	3.5	0.0
June	57.4	-0.7	-1.7	52.8	-1.9	48.7	-2.1	20.4	-0.3	61.4	.344	-.029	3.9	-0.3
Mean.....	53.1	+1.0	+0.3	48.9	-0.2	44.8	-0.8	19.5	-0.2	56.8	.299	-.009	3.4	-0.1

1864. Months.	Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Horizontal Movement of the Air.	Reading of Thermometer on Grass.				
	Mean.	Diff. from Average of 23 Years.	Mean.	Diff. from Average of 23 Years.	Mean.	Diff. from Average of 23 Years.	Amnt.	Diff. from Average of 47 Years.		Number of Nights it was			Lowest Reading at Night.	Highest Reading at Night.
										At or below 30°.	Between 30° and 40°.	Above 40°.		
April	74	— 5	In. 29.915	+ .164	Gr. 547	+ 4	In. 0.7	— 1.1	Miles. 192	8	19	3	22.9	45.5
May	73	— 4	29.837	+ .084	538	— 5	1.9	— 0.2	193	3	9	19	26.4	48.9
June	72	— 3	29.792	— .007	533	— 2	0.9	— 1.0	246	0	12	18	32.1	56.2
Mean.....	73	— 4	29.848	+ .080	539	— 1	Sum 3.5	Sum — 2.3	Mean 210	Sum 11	Sum 40	Sum 40	Lowest 22.9	Highest 43.1

Note.—In reading this table it will be borne in mind that the sign (—) minus signifies below the average, and that the sign (+) plus signifies above the average.

ENGLAND:—*Meteorological Table, Quarter ended 30th June, 1864.*

1	2	3	4	5	6	7	8	9
NAMES OF STATIONS.	Mean Pressure of Dry Air reduced to the Level of the Sea.	Highest Reading of the Thermo- meter.	Lowest Reading of the Thermo- meter.	Range of Tem- perature in the Quarter.	Mean Monthly Range of Tem- perature.	Mean Daily Range of Tem- perature.	Mean Tem- perature of the Air.	Mean Degree of Hu- midity.
	in.	°	°	°	°	°	°	
Guernsey	29·710	74·5	40·0	34·5	23·8	9·3	53·3	81
Ventnor	29·788	74·0	39·0	35·0	24·7	10·0	54·6	70
Barnstaple	29·670	89·0	34·5	54·5	43·2	18·2	55·0	82
Royal Observatory	29·716	81·0	33·4	36·0	40·0	19·5	53·1	73
Royston.....	29·749	88·0	31·4	56·6	47·6	21·9	52·8	74
Lampeter	29·699	87·6	28·0	59·6	49·8	20·8	52·4	86
Norwich.....	29·739	82·0	30·5	51·5	42·0	16·6	52·7	73
Derby	29·696	83·0	33·0	50·0	43·0	19·5	54·5	66
Liverpool	29·749	77·9	37·4	40·5	29·5	10·8	52·2	73
Wakefield	29·684	84·2	29·5	54·7	46·5	20·7	52·5	79
Stonyhurst.....	29·571	82·5	31·0	51·5	41·2	16·5	50·4	78
Harrogate	29·701	83·0	32·0	51·0	42·6	19·1	50·7	72
North Shields	29·753	72·0	32·6	39·4	35·5	12·9	48·0	83

10	11	12	13	14	15	16	17	18
NAMES OF STATIONS.	WIND.					Mean Amount of Cloud.	RAIN.	
	Mean estimated Strength.	Relative Proportion of					Number of Days on which it fell.	Amount collected.
		N.	E.	S.	W.			
								in.
Guernsey	1·1	9	7	5	9	3·1	25	4·2
Ventnor	—	4	11	4	11	—	29	4·8
Barnstaple	0·7	4	6	8	12	4·7	32	6·5
Royal Observatory	0·1	7	6	8	9	6·3	23	3·5
Royston.....	—	9	5	7	9	6·1	32	4·3
Lampeter	0·6	6	6	7	11	6·0	40	6·3
Norwich.....	1·1	9	7	8	6	5·6	22	4·2
Derby	—	6	7	5	12	—	38	5·0
Liverpool	1·0	7	6	7	10	5·9	40	7·2
Wakefield	1·1	6	5	7	12	6·0	39	6·1
Stonyhurst.....	0·6	7	6	5	12	7·1	49	9·9
Harrogate	0·8	8	6	7	9	2·7	41	6·7
North Shields	1·9	8	6	7	9	6·1	46	6·1

No. II.—SCOTLAND.

MARRIAGES, BIRTHS, AND DEATHS IN THE QUARTER

ENDED 30TH JUNE, 1864.

BIRTHS.—29,992 births were registered in Scotland during the quarter ending 30th June, 1864, being in the annual proportion of 384 births in every 10,000 of the estimated population. This is the highest birth-rate that Scotland has ever exhibited during the corresponding quarter of the nine previous years, and is greatly above the average rate, which was in the proportion of 369 births in every 10,000 persons.

The town and rural districts exhibited the usual difference in the proportion of their births. Accordingly, in the 126 town districts (which embrace almost all the towns with populations of 2,000 and upwards), 17,465 births were registered, while in the 884 rural districts (embracing the remainder of the population of Scotland), 12,527 births occurred; thus indicating an annual proportion of 421 births in every 10,000 persons in the town districts, but only 342 births in an equal population in the rural districts.

Of the 29,992 births, 27,221 were legitimate, and 2,771 illegitimate, being in the proportion of 9·2 per cent. of the births as illegitimate, or one illegitimate in every 10·8 births. The proportion of illegitimate births in the town and rural districts was the same in each; whereas in the former quarter the proportion in the rural districts very greatly exceeded that in the town districts.

Of the children born during the quarter, 15,358 were boys, and 14,634 girls; being in the proportion of nearly 105 boys for every 100 girls. 10,128 of the births were registered in April, 10,056 in May, and 9,808 in June.

DEATHS.—18,445 deaths were registered in Scotland during the second quarter of 1864, being in the annual proportion of 236 deaths in every 10,000 persons of the estimated population. With the exception of the year 1860, this is the highest proportion of deaths which has occurred during the second quarter for the last nine years, of which alone we have certain records. The average death-rate of the quarter for the nine previous years, was only 214 deaths in every 10,000 persons, so that the mortality of the past quarter has been greatly in excess.

The usual difference in the mortality in the town and rural districts was observed. Thus, in the 126 town districts, 11,491 deaths were registered; whereas in the 884 rural districts, only 6,954 occurred; giving a proportion of 277 deaths in the town districts in every 10,000 persons, but only 190 deaths in the rural districts in a like population.

6,459 of the deaths occurred during April, 6,032 during May, and 5,954 during June; giving the proportion of 215 deaths daily during April, 195 daily during May, and 198 daily during June.

INCREASE OF THE POPULATION.—As the births numbered 29,992, and the deaths 18,445, the natural increase of the population during the quarter, through the excess of births over deaths, amounted to 11,547 persons.

MARRIAGES.—5,710 marriages were registered in Scotland during the second quarter of the year 1864, being in the annual proportion of 73 marriages in every 10,000 persons of the estimated population. This is a proportion greatly above the average of the quarter for the nine previous years, which only yields the mean of 68 marriages annually in every 10,000 persons. This speaks well for the general commercial prosperity of the country, though the high mortality which has prevailed during this and the previous quarter, by making room for the formation of new families, would also tend to increase the number of marriages.

This high rate of marriage was especially remarkable in the towns; for while the 126 town districts registered 3,599 marriages, the 884 rural districts registered

only 2,111; thus indicating a marriage-rate in the towns equal to 96 marriages in every 10,000 persons, but only 57 marriages in a like population in the rural districts.

Number of Births, Deaths, and Marriages in Scotland, and their Proportion to the Estimated Population, during each of the Years 1855 to 1864.

Year	1855.		1856.		1857.		1858.		1859.	
Population ..	2,958,162		2,975,517		2,992,372		3,010,227		3,027,582	
	No.	Pr. ct.	No.	Pr. ct.	No.	Pr. ct.	No.	Pr. ct.	No.	Pr. ct.
Births	93,349	3·15	101,821	3·42	103,415	3·45	104,018	3·45	106,543	3·51
Deaths	62,004	2·09	58,529	1·96	61,906	2·06	63,539	2·11	61,714	2·03
Marriages	19,680	0·66	20,740	0·69	21,369	0·71	19,655	0·65	21,201	0·70

Year	1860.		1861.		1862.		1863.		1864.	
Population ..	3,044,938		3,062,294		3,079,650		3,097,006		3,118,701	
	No.	Pr. ct.	No.	Pr. ct.	No.	Pr. ct.	No.	Pr. ct.	No.	Pr. ct.
Births	105,629	3·46	107,036	3·49	107,138	3·47	109,325	3·53	—	—
Deaths	68,170	2·23	62,287	2·03	67,159	2·18	71,421	2·30	—	—
Marriages	21,225	0·69	20,828	0·68	20,544	0·66	22,087	0·71	—	—

HEALTH OF THE POPULATION.—Whatever be the cause, the death-rate in Scotland seems to be on the increase, and this more especially remarkable in the towns. This does not seem to depend on the prevalence of any particular epidemic, but on an increased mortality from all diseases. As this increased mortality has not been confined to the second quarter of this year, but has extended over several years, it would almost seem to indicate that our attempts to improve the health of the people by means of legislative enactments has not proved successful.

Scarlet fever has been the most prevalent epidemic during the quarter, and has been general over Scotland. It is the most fatal of the diseases to which children are liable, and always largely increases the deaths.

WEATHER.—The weather has been very peculiar during the quarter, and has unquestionably had hurtful effects on the general health of the people. During the whole month of April and the greater part of May, the temperature was much higher than usual; and as the increased temperature set in somewhat suddenly after the more than usually cold months of February and March, and was attended by much less east or north wind than usual, these months had quite the character of summer. This weather, however, was suddenly arrested on the last week of May and beginning of June by the occurrence of severe frosts during the night, or, rather, early in the mornings—not only covering the ground with hoar frost, but freezing the pools of water; even protected thermometers indicating a temperature of 21° to 29° Fahr. Scotland, south of the Firth of Forth, suffered from these frosts much more than the northern portion. The potatoes, and all delicate shrubs and flowers, were severely injured; and even many of the hardy forest trees were damaged in their leaves and tender new shoots. The occurrence of these frosts seemed quite to change the character of the weather; for, notwithstanding the much greater length of the day in June, and the greater power of the sun's rays, its mean temperature was 2° below its average, and only 3½° above May; so that, to the sensations, June felt a colder month than May.

SCOTLAND:—MARRIAGES, BIRTHS, and DEATHS *Registered in the Quarter ended 30th June, 1864.*

1	2	3	4	5	6
DIVISIONS. (Scotland)	AREA in Statute Acres.	POPULATION, 1861. (Persons.)	Marriages.	Births.	Deaths.
		No.	No.	No.	No.
SCOTLAND.....Totals	19,639,377	3,062,294	5,710	29,992	18,445
I. Northern	2,261,622	130,422	106	867	559
II. North-Western	4,739,872	167,329	151	1,072	871
III. North-Eastern	2,429,594	366,783	626	3,326	1,903
IV. East of Scotland					
V. East Midland	2,790,492	523,822	893	4,669	2,981
V. West Midland	2,693,176	242,507	350	2,204	1,396
VI. South-Western	1,462,397	1,008,253	2,171	11,861	7,275
VII. South-Eastern	1,192,524	408,962	1,032	4,075	2,401
VIII. Southern	2,069,696	214,216	381	1,918	1,059

No. III.—GREAT BRITAIN.

SUMMARY of MARRIAGES, in the Quarter ended 31st March, 1864; and
BIRTHS and DEATHS, in the Quarter ended 30th June, 1864.

COUNTRIES.	AREA in Statute Acres.	POPULATION, 1861. (Persons.)	Marriages.	Births.	Deaths.
		No.	No.	No.	No.
England and Wales.....	37,324,883	20,066,224	37,948	188,641	116,899
Scotland	19,639,377	3,062,294	5,710	29,992	18,445
GREAT BRITAIN.....	56,964,260	23,128,518	43,658	218,633	135,344

Trade of United Kingdom, 1864-63-62.—*Distribution of Exports from United Kingdom, according to the Declared Real Value of the Exports; and the Computed Real Value (Ex-duty) of Imports at Port of Entry, and therefore including Freight and Importer's Profit.*

Merchandise (<i>excluding Gold and Silver</i>), Imported from, and Exported to, the following Foreign Countries, &c. [000's omitted.]	First Three Months.					
	1864.		1863.		1862.	
	Imports from	Exports to	Imports from	Exports to	Imports from	Exports to
I.—FOREIGN COUNTRIES:						
Northern Europe; viz., Russia, Sweden, Norway, Denmark & Iceland, & Heligoland	£ 2,712,	£ 450,	£ 1,840,	£ 311,	£ 1,715,	£ 329,
Central Europe; viz., Prussia, Germany, the Hanse Towns, Holland, and Belgium	5,326,	4,834,	4,295,	3,932,	3,492,	4,193,
Western Europe; viz., France, Portugal (with Azores, Madeira, &c.), and Spain (with Gibraltar and Canaries)	8,367,	3,544,	7,211,	3,778,	5,876,	3,764,
Southern Europe; viz., Italy, Austrian Empire, Greece, Ionian Islands, and Malta	741,	2,005,	984,	1,789,	834,	1,683,
Eastern; viz., Turkey, with Wallachia and Moldavia, Syria and Palestine, and Egypt	5,830,	3,306,	5,471,	2,181,	3,436,	1,145,
Northern Africa; viz., Tripoli, Tunis, Algeria, and Morocco	93,	38,	89,	18,	93,	35,
Western Africa	167,	150,	302,	202,	283,	249,
Eastern Africa; with African Ports on Red Sea, Aden, Arabia, Persia, Bourbon, and Kooria Moorla Islands	29,	10,	3,	16,	—	25,
Indian Seas, Siam, Sumatra, Java, Philippines; other Islands	67,	458,	408,	127,	243,	287,
South Sea Islands	—	18,	—	—	—	—
China, including Hong Kong	3,781,	1,099,	5,125,	755,	3,735,	777,
United States of America	3,578,	6,908,	4,360,	4,303,	5,319,	3,704,
Mexico and Central America	828,	276,	400,	394,	242,	108,
Foreign West Indies and Hayti	415,	710,	655,	624,	300,	553,
South America (Northern), New Granada, Venezuela, and Ecuador	369,	517,	188,	373,	308,	250,
„ (Pacific), Peru, Bolivia, Chili, and Patagonia	1,119,	573,	1,154,	486,	1,160,	301,
„ (Atlantic) Brazil, Uruguay, and Buenos Ayres	1,536,	1,952,	1,265,	1,138,	852,	1,290,
Whale Fisheries; Grnld., Davis' Straits, Southn. Whaler, & Falkland Islands	3,	11,	—	5,	6,	5,
Total.—Foreign Countries	34,961,	26,859,	33,750,	20,432,	27,894,	18,698,
II.—BRITISH POSSESSIONS:						
British India, Ceylon, and Singapore	6,595,	4,906,	5,379,	2,883,	3,103,	3,830,
Stral. Cols.—New South Wales and Victoria	404,	1,541,	778,	1,761,	378,	1,621,
„ „ So. Aus., W. Aus., Tasm., and N. Zea.	286,	692,	114,	605,	77,	421,
British North America	671,	800,	509,	521,	923,	268,
„ W. Indies with Btsh. Guiana & Honduras	1,786,	881,	953,	638,	954,	712,
„ Cape and Natal	306,	485,	487,	338,	204,	487,
„ W. Co. of Af., Ascension and St. Helena	57,	73,	16,	92,	21,	94,
„ Mauritius	391,	146,	779,	98,	540,	138,
„ Channel Islands	153,	284,	122,	193,	142,	155,
Total.—British Possessions	10,649,	9,808,	9,137,	7,129,	6,342,	7,726,
General Total£	45,610,	36,667,	42,887,	27,561,	34,236,	26,424,

IMPORTS. — (United Kingdom.) — First Five Months (*January — May*), 1864-63-62-61-60.—*Computed Real Value (Ex-duty), at Port of Entry (and therefore including Freight and Importer's Profit), of Articles of Foreign and Colonial Merchandise Imported into the United Kingdom.*

(First Five Months.) FOREIGN ARTICLES IMPORTED.		[000's omitted.]		1864.	1863.	1862.	1861.	1860.
		£	£	£	£	£	£	£
RAW MATLS.— <i>Textile.</i>	Cotton Wool	29,341,	13,924,	5,702,	18,909,	18,752,		
	Wool (Sheep's)..	4,211,	3,686,	3,268,	2,849,	3,308,		
	Silk	4,679,	6,620,	6,162,	4,184,	4,137,		
	Flax	1,936,	1,050,	1,050,	641,	769,		
	Hemp	1,579,	874,	524,	358,	398,		
	Indigo	586,	767,	734,	425,	676,		
		42,332,	26,921,	17,440,	27,366,	28,040,		
,, ,, <i>Various.</i>	Hides	694,	804,	814,	638,	1,218,		
	Oils	911,	1,377,	1,128,	976,	1,040,		
	Metals	1,626,	1,378,	1,490,	1,055,	1,304,		
	Tallow	382,	392,	487,	569,	527,		
	Timber.....	1,832,	1,858,	1,439,	1,413,	1,058,		
		5,445,	5,809,	5,358,	4,651,	5,147,		
,, ,, <i>Agricltl.</i>	Guano	453,	1,167,	315,	879,	626,		
	Seeds	1,485,	1,085,	776,	968,	947,		
		1,938,	2,252,	1,091,	1,847,	1,573,		
'TROPICAL,&C., PRODUCE.	Tea	4,272,	4,907,	4,471,	3,435,	3,811,		
	Coffee	1,079,	1,200,	926,	669,	793,		
	Sugar & Molasses	4,829,	5,066,	4,756,	4,766,	4,277,		
	Tobacco	910,	650,	370,	465,	312,		
	Rice	273,	416,	500,	523,	244,		
	Fruits	105,	105,	127,	312,	251,		
	Wine	2,318,	1,816,	1,494,	1,816,	1,783,		
	Spirits	1,018,	823,	770,	649,	964,		
		14,804,	14,983,	13,414,	12,635,	12,435,		
FOOD	Grain and Meal..	7,241,	10,116,	12,836,	15,981,	6,402,		
	Provisions	3,363,	3,011,	3,208,	2,673,	2,131,		
		10,604,	13,127,	16,044,	18,654,	8,533,		
Remainder of Enumerated Articles		1,989,	1,702,	1,314,	1,307,	1,369,		
TOTAL ENUMERATED IMPORTS....		77,112,	64,794,	54,661,	66,460,	57,097,		
Add for UNENUMERATED IMPORTS (say)		19,278,	16,198,	13,665,	16,615,	14,274,		
TOTAL IMPORTS		96,390,	80,992,	68,326,	83,075,	71,371,		

EXPORTS. — (United Kingdom.) — First Six Months (*January — June*),
1864-63-62-61-60.—*Declared Real Value, at Port of Shipment, of Articles of*
BRITISH and IRISH Produce and Manufactures Exported from United Kingdom.

(First Six Months.) BRITISH PRODUCE, &C., EXPORTED.		1864.	1863.	1862.	1861.	1860.
		£	£	£	£	£
MANFRS.— <i>Textile.</i>	Cotton Manufactures..	22,401,	15,542,	15,431,	18,894,	18,580,
	„ Yarn.....	4,598,	2,967,	3,295,	4,458,	4,660,
	Woollen Manufactures	9,108,	6,084,	5,600,	4,961,	5,501,
	„ Yarn.....	2,576,	2,213,	1,573,	1,640,	1,739,
	Silk Manufactures ...	1,029,	874,	1,001,	1,024,	950,
	„ Yarn.....	129,	157,	161,	134,	117,
	Linen Manufactures....	4,085,	2,903,	2,255,	2,039,	2,001,
	„ Yarn.....	1,480,	1,114,	840,	773,	913,
		45,406,	31,854,	3,0156,	33,923,	34,461,
„ <i>Sewed.</i>	Apparel	1,136,	1,172,	1,033,	951,	965,
	Haberd. and Mllnry.	2,414,	1,817,	1,592,	1,689,	1,856,
		3,550,	2,989,	2,625,	2,640,	2,821,
METALS	Hardware.....	1,958,	1,618,	1,475,	1,640,	1,657,
	Machinery	2,060,	1,884,	1,821,	1,905,	1,592,
	Iron	6,997,	5,917,	5,071,	5,256,	5,607,
	Copper and Brass.....	1,543,	1,963,	1,293,	1,112,	1,474,
	Lead and Tin	1,567,	1,377,	1,347,	910,	1,287,
	Coals and Culm	1,940,	1,726,	1,720,	1,727,	1,544,
		16,065,	14,485,	12,727,	12,550,	13,161,
Ceramic Manufcts.	Earthenware and Glass	1,042,	951,	825,	885,	979,
Indigenous Mnfrs.	Beer and Ale	940,	887,	814,	830,	1,252,
	Butter	148,	232,	150,	252,	264,
	Cheese	78,	67,	58,	62,	55,
	Candles	63,	97,	112,	135,	120,
	Salt	144,	142,	152,	209,	170,
	Spirits	295,	205,	150,	178,	145,
	Soda	460,	434,	411,	269,	487,
		2,128,	2,064,	1,847,	1,935,	2,493,
Various Manufcts.	Books, Printed.....	211,	198,	189,	203,	221,
	Furniture	105,	134,	107,	96,	103,
	Leather Manufactures	1,088,	1,044,	1,269,	945,	1,032,
	Soap.....	109,	120,	110,	116,	124,
	Plate and Watches ...	196,	224,	214,	204,	241,
	Stationery.....	160,	143,	127,	299,	373,
		1,869,	1,863,	2,016,	1,863,	2,094,
Remainder of Enumerated Articles		4,374,	3,798,	3,531,	1,890,	1,622,
Unenumerated Articles		3,613,	4,010,	3,588,	4,457,	4,389,
TOTAL EXPORTS		78,047,	62,014,	57,315,	60,143,	62,020,

SHIPPING. — FOREIGN TRADE. — (United Kingdom.) — First Six Months (January—June), 1864-63-62-61.—*Vessels Entered and Cleared with Cargoes, including repeated Voyages, but excluding Government Transports.*

(First Six Months.) ENTERED:—	1864.			1863		1862.		1861.	
	Vessels.	Tonnage (000's omitted.)	Average Tonnage.	Vessels.	Tonnage (000's omitted.)	Vessels.	Tonnage (000's omitted.)	Vessels.	Tonnage (000's omitted.)
<i>Vessels belonging to—</i>	No.	Tons.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Russia	255	89,	349	135	44,	149	47,	168	51,
Sweden	522	82,	157	458	73,	367	63,	437	80,
Norway	1,481	297,	201	1,416	293,	1,125	212,	1,066	200,
Denmark	1,332	126,	95	1,474	139,	1,053	103,	1,229	118,
Prussia and Ger. Sts.	800	216,	270	1,754	416,	1,459	366,	1,741	382,
Holland and Belgium	892	121,	136	843	117,	796	107,	809	107,
France	1,217	98,	80	1,417	118,	838	70,	1,002	79,
Spain and Portugal	215	61,	284	192	59,	184	55,	247	56,
Italy & other Eupn. Sts.	226	66,	292	225	68,	300	91,	397	112,
United States	202	232,	1,148	395	406,	561	480,	937	834,
All other States	7	3,	428	9	3,	8	3,	6	2,
United Kingdm. & } Depds.	7,149	1,391,	195	8,318	1,736,	6,840	1,597,	8,075	2,021,
	10,552	3,255,	308	10,170	3,034,	9,098	2,720,	9,087	2,714,
<i>Totals Entered</i>	17,701	4,646,	262	18,488	4,770,	15,938	4,317,	17,162	4,735,
CLEARED:—									
Russia	229	95,	415	161	53,	170	55,	179	54,
Sweden	470	77,	163	429	73,	372	70,	477	87,
Norway	1,103	213,	193	875	163,	914	171,	943	169,
Denmark	1,347	129,	96	1,541	146,	1,273	124,	1,471	145,
Prussia and Ger. Sts.	1,150	275,	239	2,394	488,	2,194	437,	2,255	422,
Holland and Belgium	817	126,	154	901	139,	1,082	164,	971	136,
France	2,286	226,	99	2,256	217,	2,458	243,	2,702	259,
Spain and Portugal	196	58,	296	175	59,	187	59,	202	52,
Italy & other Eupn. Sts.	418	135,	323	302	96,	306	94,	519	148,
United States	213	236,	1,108	348	353,	518	447,	794	722,
All other States	14	6,	428	11	4,	17	8,	12	5,
United Kingdm. & } Depds.	8,243	1,576,	191	9,393	1,791,	9,491	1,872,	10,525	2,199,
	14,068	4,214,	299	13,816	3,827,	13,261	3,612,	12,358	3,238,
<i>Totals Cleared</i>	22,311	5,790,	260	23,209	5,618,	22,752	5,484,	22,883	5,437,

GOLD AND SILVER BULLION AND SPECIE. — IMPORTED AND EXPORTED. — (United Kingdom.) — Computed Real Value for the First Six Months (January—June), 1864-63-62.

[000's omitted.]

(First Six Months.)	1864.		1863.		1862.	
	Gold.	Silver.	Gold.	Silver.	Gold.	Silver.
Imported from:—	£	£	£	£	£	£
Australia	1,817,	—	2,885,	—	3,295,	—
So. Amca. and W. } Indies	2,670,	3,386,	2,163,	3,580,	917,	3,016,
United States and } Cal.	4,213,	54,	3,491,	527,	3,214,	45,
	8,700,	3,440,	8,539,	4,107,	7,426,	3,061,
France	113,	756,	179,	483,	83,	673,
Hanse Towns, Holl. } & Belg.	197,	1,129,	252,	895,	386,	1,459,
Prtgl., Spain, and } Gbrltr.	30,	51,	8,	43,	12,	66,
Mita., Trky., and } Egypt	1,	1,	115,	3,	3,	6,
China	—	—	—	—	—	1,
West Coast of Africa	47,	8,	38,	2,	57,	3,
All other Countries...	151,	56,	605,	61,	126,	13,
Totals Imported	9,239,	5,441,	9,736,	5,594,	8,093,	5,282,
Exported to:—						
France	3,922,	1,013,	2,264,	550,	2,711,	394,
Hanse Towns, Holl. } & Belg.	67,	469,	988,	535,	122,	247,
Prtgl., Spain, and } Gbrltr.	792,	26,	1,438,	—	1,062,	7,
	4,781,	1,508,	4,690,	1,085,	3,895,	648,
Ind. and China (viâ } Egypt)	1,356,	3,477,	956,	4,487,	629,	4,364,
Danish West Indies...	—	—	—	—	65,	5,
United States	181,	5,	34,	—	29,	—
South Africa	58,	3,	118,	62,	—	—
Mauritius.....	—	—	—	—	—	—
Brazil	882,	88,	1,009,	42,	225,	10,
All other Countries...	321,	77,	1,846,	51,	2,458,	591,
Totals Exported	7,579,	5,158,	8,653,	5,727,	7,301,	5,618,
Excess of Imports ...	1,660,	283,	1,083,	—	792,	—
„ Exports ...	—	—	—	133,	—	336,

REVENUE.—(UNITED KINGDOM.)—30TH JUNE, 1864-63-62-61.

Net Produce in YEARS and QUARTERS ended 30TH JUNE, 1864-63-62-61.

[000's omitted.]

QUARTERS, ended 30th June.	1864.	1863.	1864.		Corresponding Quarters.	
			Less.	More.	1862.	1861.
	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.
Customs	5,446,	5,857,	,411,	—	5,791,	5,820,
Excise	4,864,	4,405,	—	,459,	4,886,	5,171,
Stamps	2,539,	2,394,	—	,145,	2,253,	2,186,
Taxes	1,432,	1,390,	—	42,	1,357,	1,363,
Post Office	960,	950,	—	10,	850,	825,
Property Tax	15,241,	14,996,	,411,	,656,	15,137,	15,365,
	2,469,	2,918,	,449,	—	2,772,	2,588,
Crown Lands	17,710,	17,914,	,860,	,656,	17,909,	17,953,
	69,	68,	—	1,	68,	67,
Miscellaneous	495,	508,	13	—	433,	378,
Totals	18,274,	18,490,	,873,	,657,	18,410,	18,398,
			NET DECR. £216,004			

YEARS, ended 30th June.	1864.	1863.	1864.		Corresponding Years.	
			Less.	More.	1862.	1861.
	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.
Customs	22,821,	24,100,	1,279,	—	23,644,	23,393,
Excise	18,666,	16,674,	—	1,992,	18,047,	19,492,
Stamps.....	9,462,	9,135,	—	,327,	8,658,	8,466,
Taxes	3,260,	3,183,	—	77,	3,154,	3,136,
Post Office	3,820,	3,750,	—	70,	3,535,	3,400,
Property Tax	58,029,	56,842,	1,279,	2,466,	57,038,	57,887,
	8,635,	10,713,	2,078,	—	10,549,	12,423,
Crown Lands	66,664,	67,555,	3,357,	2,466,	67,587,	70,310,
	306,	301,	—	5,	296,	292,
Miscellaneous	3,023,	2,828,	—	,195,	1,803,	1,260,
Totals	69,993,	70,684,	3,357,	2,666,	69,686,	71,862,
			NET DECR. £690,902			

REVENUE.—UNITED KINGDOM.—QUARTER ENDED 30TH JUNE, 1864:—

An Account showing the REVENUE and other RECEIPTS of the QUARTER ended 30th June, 1864; the APPLICATION of the same, and the Charge of the Consolidated Fund for the said Quarter, together with the Surplus or Deficiency upon such Charge.

Received:—

Surplus Balance beyond the Charge of the <i>Consolidated Fund</i> for the Quarter ended 31st March, 1864, viz.:—	£
Great Britain	—
Ireland	£637,995
	637,995
Income received in the Quarter ended 30th June, 1864, as shown on preceding page	18,274,200
Amount raised per Act 25 and 26 Victoria, cap. 78, on account of Fortifications, &c.	250,000
Amount received in the Quarter ended 30th June, 1864, in repayment of Advances for Public Works, &c.	472,428
	£19,634,623
Balance, being the Deficiency on 30th June, 1864, upon the charge of the Consolidated Fund in Great Britain, to meet the Dividends and other charges payable in the Quarter to 30th September, 1864, and for which Exchequer Bills (Deficiency) will be issued in that Quarter	951,412
	£20,586,035

Paid:—

Amount applied out of the Income for the Quarter ended 30th June, 1864, in Redemption of Exchequer Bills (Deficiency), for the Quarter ended 31st March, 1864	£
	722,330
Amount applied out of the Income to <i>Supply Services</i> in the Quarter ended 30th June, 1864	9,536,918
Charge of the <i>Consolidated Fund</i> for the Quarter ended 30th June, 1864, viz.:—	
Interest of the Permanent Debt	£6,297,940
Terminable Debt	327,830
Principal of Exchequer Bills	969,300
Interest of " "	72,795
" Deficiency "	—
The Civil List	102,370
Other Charges on Consolidated Fund	577,638
Advances for Public Works, &c.	593,125
Sinking Fund	588,169
	9,529,167
Surplus Balance in Ireland beyond the Charge of the Consolidated Fund in Ireland for the Quarter ended 30th June, 1864	797,620
	£20,586,035

CORN.—*Gazette Average Prices (ENGLAND AND WALES), Second Quarter of 1864.*

[This Table is communicated by H. F. JADIS, ESQ., Comptroller of Corn Returns.]

Weeks ended on a Saturday 1864.		Weekly Average. (Per Impl. Quarter.)					
		Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
		s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
April	2	40 2	31 —	19 2	28 5	32 6	32 11
"	9	40 1	30 9	18 11	29 —	32 8	32 8
"	16	40 1	30 10	19 3	27 8	33 —	31 11
"	24	39 7	31 1	19 9	29 —	32 7	32 1
"	30	39 2	30 6	19 4	28 7	33 9	32 9
Average for April		39 9	30 10	19 3	28 6	32 10	32 5
May	7	38 9	30 3	19 5	32 3	34 —	32 1
"	14	39 3	29 9	19 8	28 5	34 3	32 6
"	21	39 8	29 6	20 —	31 5	34 2	32 9
"	28	37 5	29 —	19 10	27 7	34 6	31 9
Average for May		39 3	29 7	19 8	29 11	34 2	32 3
June	4	38 11	29 6	19 10	28 4	34 10	33 5
"	11	39 6	27 11	20 —	34 1	34 10	33 9
"	18	40 3	27 6	20 4	32 8	35 5	33 9
"	25	40 —	28 —	20 8	—	35 5	33 3
Average for June		39 8	28 3	20 2	31 8	35 1	33 6
Average for the Quarter ..		39 7	29 8	19 8	29 9	34 —	32 9

RAILWAYS.—PRICES, April—June;—and TRAFFIC, Jan.—June, 1864.

Total Capital Ex- pended Mlms.	Railway.	For the (£100). Price on			Miles Open.		Total Traffic first 26 Weeks. (unit 000's omitted.)		Traffic pr. Mile pr. Wk 26 Weeks.		Dividends per Cent. for Half Years.		
		1st June	2nd May	1st April	'64.	'63.	'64.	'63.	'64.	'63.	31 Dec. '63.	30 Jun. '63.	31 Dec. '62.
£					No.	No.	£	£	£	£	s. d.	s. d.	s. d.
50,0	Lond. & N. Westn.	111 $\frac{1}{4}$	110 $\frac{3}{4}$	109 $\frac{3}{4}$	1,229	1,179	2,518,	2,286,	92	86	60 —	42 6	55 —
44,0	Great Western	65 $\frac{1}{4}$	64 $\frac{3}{4}$	65 $\frac{3}{4}$	1,056	1,056	1,634,	1,542,	68	64	30 —	20 —	30 —
15,8	„ Northern....	131	130	129	353	351	803,	701,	92	84	87 6	42 6	85 —
20,9	„ Eastern	47 $\frac{1}{2}$	47 $\frac{1}{2}$	47 $\frac{1}{2}$	663	663	778,	720,	50	47	25 —	12 6	25 —
11,8	Brighton	105	104	104 $\frac{1}{2}$	267	250	448,	448,	80	84	50 —	50 —	70 —
15,0	South-Eastern	91	90 $\frac{1}{2}$	91 $\frac{3}{4}$	306	306	554,	530,	99	99	58 4	45 —	60 —
14,7	„ Western	98 $\frac{1}{2}$	98 $\frac{1}{2}$	98 $\frac{1}{2}$	450	441	558,	539,	59	55	55 —	55 —	60 —
172,2		92 $\frac{3}{4}$	92 $\frac{1}{4}$	92 $\frac{3}{8}$	4,324	4,246	7,293,	6,766,	77	74	52 3	36 9	55 —
23,2	Midland.....	131 $\frac{1}{4}$	131	128 $\frac{3}{4}$	641	630	1,137,	1,015,	74	68	70 0	57 6	65 —
19,9	Lanesh. and York.	112 $\frac{1}{4}$	111	110	403	395	977,	857,	106	93	47 6	42 6	40 —
12,7	Sheffield and Man.	54 $\frac{1}{2}$	54 $\frac{1}{2}$	55	239	239	431,	380,	75	63	15 —	—	—
31,1	North-Eastern	102	101 $\frac{1}{2}$	101 $\frac{1}{2}$	1,095	1,079	1,453,	1,302,	60	51	55 —	42 6	50 —
86,9		100	99 $\frac{1}{2}$	98 $\frac{3}{4}$	2,378	2,343	3,998,	3,554,	79	69	46 10	47 6	51 8
9,9	Caledonian	119 $\frac{1}{2}$	121	119	252	234	472,	423,	81	77	62 6	52 6	60 —
5,6	Gt. S. & Wn. Irlnd.	92	93	93	387	329	208,	204,	24	27	55 —	42 6	50 —
274,6	Gen. aver.	97	96 $\frac{3}{4}$	96 $\frac{1}{2}$	7,341	7,152	11,971,	10,947,	74	69	51 7	38 —	49 9

Consols.—Money Prices, 1st April, 91 $\frac{1}{2}$ to $\frac{5}{8}$ de.—2nd May, 91 $\frac{1}{8}$ to $\frac{1}{4}$ de.—1st June, 91 $\frac{3}{8}$ to $\frac{7}{8}$ de.
 Exchequer Bills.—1st April, 8s. to 3s. dis.—2nd May, 9s. to 4s. dis.—1st June 6s. to 1s. dis.

BANK OF ENGLAND.—WEEKLY RETURN.

Pursuant to the Act 7th and 8th Victoria, c. 32 (1844), for Wednesday in each Week, during the SECOND QUARTER (April—June) of 1864.

[0,000's omitted.]

1	2	3	4	5	6	7
ISSUE DEPARTMENT.					COLLATERAL COLUMNS.	
Liabilities.	DATES.	Assets.			Notes in Hands of Public. (Col. 1 minus col. 16.)	Minimum Rates of Discount at Bank of England.
Notes Issued.	(Wednesdays.)	Government Debt.	Other Securities.	Gold Coin and Bullion.		
£ Mlns.	1864.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	1864. Per ann.
27,59	April 6 ...	11,01	3,63	12,94	20,74	25 Feb. 6 p. ct.
27,03	„ 13 ...	11,01	3,63	12,38	21,26	
26,71	„ 20 ...	11,01	3,63	12,06	21,15	16 Apl. 7 „
26,48	„ 27 ...	11,01	3,63	11,83	20,96	
26,43	May 4 ...	11,01	3,63	11,78	21,49	2 May 8 „
26,71	„ 11 ...	11,01	3,63	12,06	20,96	5 „ 9 „
27,25	„ 18 ...	11,01	3,63	12,60	20,82	20 „ 8 „
27,69	„ 25 ...	11,01	3,63	13,04	20,42	27 „ 7 „
28,03	June 1 ...	11,01	3,63	13,38	20,88	
28,03	„ 8 ...	11,01	3,63	13,38	20,27	
28,20	„ 15 ...	11,01	3,63	13,55	20,13	16 June 6 „
28,28	„ 22 ...	11,01	3,63	13,63	20,17	
28,12	„ 29 ...	11,01	3,63	13,47	20,69	

BANKING DEPARTMENT.

8	9	10	11	12	13	14	15	16	17	18
Liabilities.					Assets.					
Capital and Rest.		Deposits.		Seven Day and other Bills.	DATES. (Wdnsdys.)	Securities.		Reserve.		Totals of Liabili- ties and Assets.
Capital.	Rest.	Public.	Private.			Government.	Other.	Notes.	Gold and Silver Coin.	
£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	1864.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.
14,55	3,14	9,82	13,35	,53	April 6	11,27	22,85	6,85	,68	41,39
14,55	3,16	5,93	13,59	,52	„ 13	11,02	20,27	5,77	,70	37,76
14,55	3,19	5,79	13,68	,53	„ 20	11,02	20,47	5,56	,69	37,75
14,55	3,21	6,22	12,62	,53	„ 27	11,02	19,84	5,52	,74	37,13
14,55	3,22	6,98	12,28	,56	May 4	11,07	20,90	4,94	,67	37,59
14,55	3,26	7,30	12,90	,52	„ 11	10,78	21,36	5,75	,65	38,54
14,55	3,28	7,57	12,96	,49	„ 18	10,78	20,97	6,43	,67	38,86
14,55	3,29	7,97	12,83	,45	„ 25	10,78	20,41	7,27	,67	39,15
14,55	3,25	8,29	12,49	,46	June 1	11,07	20,16	7,15	,67	39,05
14,55	3,27	8,75	11,97	,49	„ 8	11,07	19,54	7,76	,66	39,04
14,55	3,28	8,51	12,79	,47	„ 15	11,12	19,66	8,07	,75	39,61
14,55	3,30	9,29	13,05	,45	„ 22	11,12	20,73	8,11	,69	40,65
14,55	3,33	10,21	12,80	,46	„ 29	11,12	22,08	7,43	,73	41,35

CIRCULATION.—COUNTRY BANKS.

Average Amount of Promissory Notes in Circulation in ENGLAND and WALES on Saturday, in each Week during the SECOND QUARTER (April—June) of 1864; and in SCOTLAND and IRELAND, at the Four Dates, as under.

ENGLAND AND WALES.				SCOTLAND.				IRELAND.		
DATES.	Private Banks. (Fixed Issues, 4,26.)	Joint Stock Banks. (Fixed Issues, 3,27.)	TOTAL. (Fixed Issues, 7,54.)	Four Weeks, ended	£5 and upwards.	Under £5.	TOTAL. (Fixed Issues, 2,75.)	£5 and upwards.	Under £5.	TOTAL. (Fixed Issues, 6,35.)
1864.	£ Mlns.	£ Mlns.	£ Mlns.	1864.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.
April 2	3,23	3,03	6,26	April 2	1,45	2,47	3,92	2,71	2,82	5,53
„ 9	3,32	3,06	6,38							
„ 16	3,29	3,07	6,36							
„ 23	3,27	3,03	6,30							
„ 30	3,24	3,00	6,25							
May 7	3,25	3,06	6,31	May 7	1,50	2,54	4,04	2,86	2,79	5,65
„ 14	3,24	3,06	6,31							
„ 21	3,21	2,99	6,20							
„ 28	3,16	2,88	6,04							
June 4	3,13	2,85	5,98	June 4	1,73	2,81	4,53	3,01	2,78	5,79
„ 11	3,08	2,84	5,93							
„ 18	3,04	2,83	5,87							
„ 25	3,05	2,84	5,89							

FOREIGN EXCHANGES.—*Quotations as under, LONDON on Paris, Hamburg & Calcutta; —and New York, Calcutta, Hong Kong & Sydney, on LONDON—with collateral cols.*

1	2	3	4	5	6	7	8	9	10	11	12	13	14
DATES.	Paris.				Hamburg.			New York.	Calcutta.		Hong Kong.	Syd- ney.	Stand- ard Silver in bars in Loun- don.
	London on Paris.	Bullion as arbitrated.		Prem. or Dis. on Gold per mille.	London on Hambg.	Bullion as arbitrated.			India House.	At Calcutta on London.			
		Agnst. Engd.	For Engd.			Agnst. Engd.	For Engd.						
3 m. d.				3 m. d.			60 d. s.	60 d. s.	6 m. s.	6 m. s.	30 d. s.	pr. oz.	
1864.		pr. ct.	pr. ct.			pr. ct.	pr. ct.	pr. ct.	d.	d.	d.	pr. ct.	d.
April 2 ..	25·57½	—	—	—	13·7¾	—	—	177¼	24½	25¾	59	—	61¾
„ 16 ..	·60	—	—	½ pm	·8	—	—	181	24	„ 7/8	59¼	par.	„ 5/8
May 7 ..	·90	—	·1	1 „	·11	—	—	192	23¾	„ 5/8	58	„	61
„ 21 ..	·75	—	·4	4 „	·9¾	—	·4	193	„	„ 5/8	„ ¼	„	60½
June 4 ..	·67½	—	·1	2 „	·8¾	—	—	193½	„	„ 1/8	58	„	61¼
„ 18 ..	·62½	—	„	„	·9	—	·3	211	23	25	„	„	„ 5/8

JOURNAL OF THE STATISTICAL SOCIETY,

DECEMBER, 1864.

OPENING ADDRESS *of the* PRESIDENT *of* SECTION F (ECONOMIC SCIENCE *and* STATISTICS), *of the* BRITISH ASSOCIATION *for the* ADVANCEMENT *of* SCIENCE, *at the* THIRTY-FOURTH MEETING, *at* BATH, *in* September, 1864. *By* WILLIAM FARR, Esq., M.D., D.C.L., F.R.S.

GENTLEMEN,—I am deeply sensible of the honour which has been conferred upon me by placing me in this Chair.

In opening your proceedings, I propose to bring rapidly under your notice the state of the science which you have met in this Section to promote as members of the British Association.

Mathematics is the great abstract science which fosters all the rest; and physics, mechanics, chemistry, mineralogy, geology, geography, ethnology, embrace the phenomena of the heavens, the earth, and the three kingdoms of nature. They occupy other Sections.

Man himself is the special study of physiology and of ethnology in two of those Sections; but there they inquire into the functions and parts of the body, or the condition of our race as the foremost of the animal kingdom; while geography describes nations, as it describes mountains and rivers, because they are on the earth's surface.

We have to do with men in States, and in political communities. Statistics is essentially a science of the relations of numbers of men, and its laws are founded on the observation of mankind as they exist in nations now and in past times; but, building on facts that can be measured and expressed in numbers, it is only in civilized communities, and in recent times, that it finds adequate materials. The domain of the past we almost abandon to the geologists or the historians: and we leave the uncivilized world in the possession of our enterprising neighbours the ethnologists; while we yet hope one day to enter this field, and indeed have already made, under established Governments, some conquests among the races in India, in Russia, and in South America.

Man in society possesses property, and all his possessions fall

within our province, for they form an intrinsic part of the State. We have to study, besides the political relations of men to each other, their riches in land, in horses, sheep, and the cattle on a thousand hills, in grain and crops, in precious metals, in minerals, and in merchandise.

Here are found the grounds of two grand divisions of statistics; the first falling under the head of *Population*, and the second under the head of *Property*, which is the subject also of economic science.

Under POPULATION are discussed the races, sexes, ages, marriages, births, deaths, causes of death, the ranks, professions and tenures of each people in a State: from their earnings the values of their life-work is deduced; certain acts are also investigated, such as baptisms, attendances at schools or at churches, votes at elections, crimes, punishments, diseases, and civil actions. Civil and military statistics constitute a capital chapter of this division.

The statistics of PROPERTY are divisible into two chapters: the first treats of the fixed property, including land, mines, forests, manufactories, houses, roads, canals, and rivers; its basis is a map on a scale large enough to exhibit the quantities of every parcel of land and the area of every dwelling-house: the holdings of land, its burthens, and transfers, naturally fall under this head.

Under the second head falls the movable property, including live stock, ships, machines, goods, merchandise, and vendible products of all kinds.

The annual produce of the two classes of property, its transport, its sales, its prices, and its relation to the stock, form the subject of the three sections of agricultural statistics, industrial statistics, and commercial statistics.

The public revenue and expenditure, the financial operations of the public exchequer, of the banks, and of the great companies, offer an extensive field, and are in the domain of financial statistics.

There are other minor divisions, but the object I aim at is to survey rapidly the field of our labours, which, although it is concerned in the facts of public interest to statesmen and political inquirers, and includes the fundamental part of politics, yet does not embrace all the doctrines of that kindred science, which, I may add, has been luminously expounded by Sir George Lewis in the treatise on the "Methods of Observation and Reasoning in Politics;" his greatest work—and to politics what Whewell's book is to the physical sciences—replete with the latest results of European learning, and a solid, hitherto unsurpassed, contribution to political science.

Sir George Lewis was a Fellow of the Statistical Society, and himself a labourer in early life in the field of practical statistics. He was well versed, too, in its philosophy, yet his genius did not lie in the direction of the physical sciences or of the mathematics, which

are the soul of statistics; but, standing on the border land, and on an eminence surveying all the territories, his calm judgment is impartial and commands attention. Noticing the imperfections in the early records of facts and numbers, Sir George Lewis observes:—

“ The importance of accurate statistical information as the basis
“ of historical description, as well as of political reasoning, both
“ speculative and practical, cannot be too much insisted on. The
“ attention of modern Governments has been directed to the subject,
“ and it has been understood that a constant registration of social
“ and political facts ought to be kept up, without any immediate
“ practical object; like the observations of the heavenly bodies, tem-
“ perature, weather, tides, and other natural phenomena, made by
“ the physical philosopher. Facts, unimportant in themselves,
“ become important as units comprised in a complete enumeration;
“ and results are thus obtained, to which mere conjecture, or the
“ loose and vague impressions derived from a partial observation,
“ could not have led. This process is now carried on, with more or
“ less completeness, by all civilized Governments, and the collection
“ of statistical information, not merely for practical but for scientific
“ purposes, is recognized as a legitimate object of public policy.
“ There are now statistical departments in all the principal States
“ of Europe.”*

Here is another element of classification, for the materials of science exist in each State, so in our archives are the statistics of England, Sweden, France, Spain, Italy, Germany, Russia, the United States of America, and some other countries, at least in outline. M. Quételet, one of the founders of this Section of the British Association, is now engaged on a work, of which proofs are on the table, exhibiting the comparative statistics of the population of Europe, on a plan nearly uniform. He submits it to your inspection, and had a great desire to be present here, but is kept away by circumstances over which he has no control. I feel sure that I have your authority to reciprocate the good wishes of this veteran of science. (Applause.) The work had its origin at the International Statistical Congress, which was convened in 1860 by Her Majesty's Government, in London, and was presided over by the late Prince Consort; whose sagacity, we may believe, did not fail him when he proclaimed that the statisticians of his day were laying “ the foundation
“ of an edifice, necessarily slow of construction, and requiring, for
“ generations to come, laborious and persevering exertion, intended
“ as it is for the promotion of human happiness, by leading to the
“ discovery of those eternal laws upon which that universal happiness
“ is dependent.” These last words of the good Prince may well cheer us on the way.

* Vol. i, p. 137.

You will see at once that the observation of the scientific facts with which we are concerned in so many States of the world, has already supplied the materials for sure induction, and placed statistics among those applied sciences which reveal laws, and arm man with power over man and over nature.

In proportion as Governments are organized and intelligent, they cultivate statistics; and it is gratifying to observe that nearly all the States of Europe sent official delegates to the Statistical Congress which met last year at Berlin, under the auspices of the Government of Prussia, and under the able presidency of Dr. Engel.

Spain, which had fallen in arrear, had been put upon her mettle, and in 1857, and again in 1861, took a census, of which many interesting results have just been published: the population was 15,658,531, some millions more than she formerly had credit for, and entitling her, when her finances are upon a sound footing, again to a place among the Powers of Europe.

The Kingdom of Italy was no sooner constituted than its statistics were developed. A census was taken, and we find a population of 22 millions (21,893,171*) in this constitutional State. Over Rome, Venice, Lombardy, Mantua, Trieste, the Tyrol, Ticino, Savoy, Corsica, Malta, and the Kingdom of Italy, a population of 27 millions speaking Italian is diffused. The births, deaths, and marriages are registered, and the principal statistical elements are under observation and inquiry in the Kingdom of Italy, which will henceforward have a voice of weight in the affairs of Europe, and in science. The statistics of Italy are ably displayed in the Statistical Annuary, for 1864, of Correnti and Maestri, who have had a large share in the organization of the statistics of the new kingdom.

Russia, until lately, did little for statistical science; and the Emperor Nicholas refused to send a Russian to the first Congress in Brussels, on the alleged ground that his empire had nothing to learn from the science of Europe. Things have since greatly changed, and the Russian Government now fully recognizes the claims not only of her own people, but of science and of Europe, to a faithful account of the population and resources of that empire. M. Von Buschen and Mr. Wilson were sent over by the Imperial Government to observe our proceedings in the last census; and M. Troinski, who was here recently, informed me that measures were under consideration for taking as accurate a census of Russia as circumstances will allow. The births, deaths, and marriages, will also be registered more accurately. We may thus expect a great accession of information from Russian statisticians, respecting an empire emancipating millions of serfs, and passing through changes which the older States of

* Estimated for 1st January, 1863; by the census of 1st January, 1862, the population was 21,776,953; increase 116,218.

Europe traversed in what may be called pre-statistic times. Popular books contain many statements of numbers which are put forth as statistics, but are purely conjectural, or are based upon loose estimates. Among the latter numbers is the alleged population of Russia, which is set down in the "Gotha Almanack" at 74,139,394 souls, neither more nor less—exclusive of the population of Russian America, which belonged to a company whose privileges expired at the end of 1863. How far this is wrong it is difficult to say; there have been partial censuses, but the population of the empire has never been enumerated.

So it is in our Indian Empire, the population of which is cited as 135,571,351. The populations of the North-West Provinces, and of the Madras Presidency, have been counted, but the other numbers are "guesses," for we have not everywhere adopted the "practice of counting." The population is as likely to be several millions more in India as to be millions less, for the maxim of Dr. Johnson is not invariably true, that "when numbers are guessed they are always magnified." It is said that the population of Rome was once estimated by the weight of cobwebs within its precincts; and that Xerxes ascertained the numbers of his host by measuring the ground upon which they stood. How the guesses are made in India we do not precisely know, but it is probable that the population of many of the provinces has been estimated from their area. The enlightened and really beneficent Government of India, which collects 43,000,000*l.* of revenue from the population annually, will no doubt ere long contrive to perform the really arduous task, at least once, for that part of Southern Asia which Russia is about to perform in the North for the barbarous tribes of Siberia, and thus extend the boundaries of official knowledge, enumerate Her Majesty's subjects, and make India by its census an integral part of the empire.

The British Colonies deserve great praise for their statistics. The last census of Canada is elaborate; and Mr. Archer, Mr. Rolleston, and their colleagues in Australia, have placed the statistics of those colonies upon such a footing that we shall be able to trace with extraordinary minuteness the development of the empire in the southern hemisphere.

Of China several State censuses are cited, but I confess that I have less faith in the official returns of 367,632,907 "mouths,"*—the Chinese for *souls*—in China proper—than I have in those of India; in fact, we should be glad to hand them over to the geographers, recommending them, when they give the populations of countries, even in their elementary books, to cite the figures with discrimina-

* See paper by R. M. Martin, in "Addenda to Report on Sanitary State of the Army in India," 8vo. edit., p. 559. A recent return makes the population of the whole empire 415,000,000. ("Gotha Almanack," 1864.)

tion. A due appreciation of the value of published facts is an element in all the sciences.

Statistics is prosecuted to some extent in every State; and in countries where observation is difficult, intelligence scarce, and facts fugitive, figures appear to be so essential that they are invented. I should regret to apply this remark to the census of the Sandwich Islands, which in 1861 had a population of 67,084 natives and 2,716 foreigners, and is declining, according to the census of King Kaméhaméha IV and of his Anglo-Saxon Queen Emma, *née* Miss Rooker. Indeed I would rather adduce the insular census to prove that statistics are journeying round the world, and that the statistics of small States are often interesting, and illustrate general laws.

It is evident too that the statistics of Bath, for instance, which has 52,528 inhabitants, are at least as instructive as the statistics of Hesse Homburg, which has a population of only 26,817; while those of the 444,873 people of Somerset, the county in which we meet, are not a whit less interesting than those of any of twenty-four kingdoms and principalities in Germany, which fill the pages of that useful publication the "Gotha Almanack."

Wherever there is local Government we look for local statistics; as they afford means of information which enlightened municipal councillors can always turn to account. We may well believe that, as Adam Smith boasted he had converted some of the merchants of Glasgow to his doctrines before he had promulgated them to the world, his spirit lingers among their descendants, for the statistics of that city have long held an honourable place on our rolls. The statistics of Glasgow are—as indeed are those of any city—of universal interest, when they are collected and discussed by such a statistician as the late Dr. Strang, a truthful observer, a thoughtful writer, and an excellent man. In the name of our Section I venture to say that we shall be very glad if the Mayors—with the prosperity of Glasgow before them—and all the town councils in England, Bath leading, will at once appoint competent officers to elaborate their statistics.

As well as Governments and municipal bodies, England has always at work in the field of science richly gifted independent men, like Buckle and Darwin, who devote their lives to science, either as observers or as reasoners; and as an example of what an individual can do, I will cite Dr. Heysham, who twice enumerated from house to house the population of Carlisle, abstracted the ages from the burial registers, and published the results in a judicious form. The volume, Mr. Milne—as he informed me—found by chance on a book-stall; whereupon he opened a correspondence with Dr. Heysham, constructed the Carlisle Life Table, and deduced a general law of mortality which served through many years as the basis for thousands

of transactions, and for the valuation of millions of property. The names of the two men, the statistical observer and the statistical reasoner, will remain for ever engraved upon our annals.

It is evident that statistics may be investigated in every English parish; and I know no fairer field than local statistics offer to a liberal and ingenuous mind. Some subjects can be more impartially investigated by private gentlemen than by men in office; and a specimen of this is a paper by Mr. Norman, which is a model of style and statistical logic, proving the fact which at first appeared paradoxical, that, large as the taxation is, the people of England pay less in proportion to their means, and get more work for their money than the people of any other country.* Again, the remarkable work before you of M. Guerry, on the comparative crime of England and France, embodies the labours of the life of one of the most ingenious private statisticians in Europe.†

The Statistical Society of London has done so much, by its papers and its Journal, in the eyes of Europe for science, that a similar society has recently been founded in Paris, and publishes an excellent Journal, to which M. Legoyt and others contribute; the necessary complement to the well known "*Journal des Économistes*." The Dublin and the Manchester Societies remind us by their useful labours of the utility of Statistical Societies in our great cities.

I admit that the country has a right to look to the Government for the census, for registration returns, for commercial statistics, for agricultural statistics, for industrial statistics, and for financial statistics: as the collection, analysis, and promulgation of facts of universal interest is one of the Queen's most useful prerogatives. Formerly little or nothing of the kind was done; but by referring to the annual reports which emanate now from the public offices—you will see that this great duty is kept in view. The reports of the War Office and the Admiralty; those of the Board of Trade, of the Customs, the Inland Revenue, the Post Office, and of the Registrars-General of England, Scotland, and Ireland, of the Poor Law Board, and of the Emigration Commissioners, of the Privy Council Officer of Health, of the Education, Factory, and Mine Inspectors; the judicial statistics, criminal and civil, the Consuls' Reports which the Foreign Office now publishes, show that the Civil Service is everywhere anxious to do its duty. And I shall perhaps be pardoned for reminding you, that men in the Civil Service are among the great names of our science, from Petty, King, and Davenant, to Deacon Hume, Porter, McCulloch, John Mill, and, to cite no more contem-

* "On the Pressure of Taxation in this and other Countries." By George Warde Norman, Esq.

† "*Statistique Morale de l'Angleterre comparée avec la Statistique Morale de la France*." Par M. A. M. Guerry, Correspondant de l'Institut, &c., &c. 1864.

poraries, Adam Smith himself. The Civil Service of the present day is quite in a position to sustain the statistical reputation of England in the face of Europe. What it wants is a better co-ordination of the work; which might, as was recommended by the Congress, be accomplished by a board at which the principal offices should be represented.

We venture in this Section to call the attention of Mr. Milner Gibson to the organization of a central authority "to direct," in the words of the late Prince Consort, "all the great statistical operations." Such a body has been recently created in many of the States of Europe.

Another matter this Association may very properly urge on the same minister. We ought, from agricultural statistics, to know approximately in October the produce of the harvest in Europe as well as in America, and the state of the live stock to supply the markets. The season has been extraordinary; what have been its effects upon the crops? Unfortunately the Government has nothing to tell us. English agricultural statistics are a complete blank. Yet no one seriously doubts the utility of this question of the supply of food, to town and country, to rich and poor, to farmers and merchants; it will enter largely into the commercial combinations of the next twelve months, and is one of the elements affecting the circulation.

The Registrar-General of Ireland procures the returns for that division of the United Kingdom; and the produce of the last harvest of Australia is known: it is in some parts, if my memory serves, half the average crop; an unpleasant result, which may influence the gold supply, but will partially be mitigated by timely provisions to meet a loss the extent of which is already known.

Mr. Hunt has just published a return of the mines of every kind; and of the mineral produce of the kingdom. It is alike creditable to him, to Sir Roderick Murchison, and to the mining proprietors, who voluntarily supplied the information. Some of them are not far from us, and will perhaps communicate the results to the Section.

I now come to our tools and our methods. Foremost in importance is the question of statistical units. The Legislature has just passed a measure authorizing the use of the metric weights and measures in England; and the report of a Committee of the Association on the subject will be presented to the Association by Mr. Heywood. In the first stage of statistics we count; but this no longer suffices, and we have to weigh and measure.

Upon the choice of units of weights and measures our progress in no slight degree depends. Now, one weight will not serve all purposes. Coal, for instance, cannot be sold by the ounce, it is sold

by the ton; sugar by the hundredweight; tea by the pound; gold by the ounce; while opium is administered in grains. If the hundredweight consisted of one hundred pounds, the ton of ten hundreds, the ounce of the tenth of a pound, and all the units required in every trade were so related to each other that we could say tens, hundreds, thousands, and so on, as we do in common numeration, all the compound rules which fill our books of arithmetic, and puzzle children, would be got rid of. So with regard to measures and money—let all the units increase by tens, and all goes “merry as a marriage bell.” One set of rules will apply to the weights, measures, and moneys of all trades and of all nations which use the Arabic figures. With regard to money, we cannot do better than adhere to the sovereign for statistical purposes: it is of gold, which is becoming everywhere the standard of value, is the largest unit in use, and is admirably suited to measure large quantities. The florin, and new farthings or mils, of which 100 would make a florin, $1,000 = 1\text{£}$, are all the moneys of account required. The penny would be 4 farthings, the shilling 50, and no change in the coinage is required. The Chancellor of the Exchequer will, let us hope, inaugurate this reform, which would be an immense boon to all classes that have anything to do with bills, accounts, and statistics.

We might decimalize our old weights and measures, but the several ranks of units would not fit well into each other; the change would give a great deal of trouble, and there is no chance that other nations would adopt it, for this simple reason, that the first nations have had for years the admirable metrical system in use. Our merchants deal with these nations largely, and if we adopt the meter, Russia, America, and our colonies will adopt it. If England wills it, the whole civilized world will have one system of weights, measures, and money, as it has one system of decimal arithmetic. This system annihilates those ugly pages of Colenso, the compound rules; so through it, in the words of the highest authority, Professor Barlow, “a child may learn everything necessary for entering into the common concerns of the world in a month as well and better than in a year under our complicated system.”*

A Metric Act will be an emancipation act for children, and will give them time for higher studies in mathematics. The compound rules of arithmetic, English orthography, and Latin verses, are the tasks for which the school-boy is oftenest punished; and they are the opprobrium of the age. Unlike the truths of science, they can only be flogged into the brains of English boys. Statists should at once make the pound sterling and the metric weights and measures their units.

* “Mathematical Dictionary.”

In the English market gold and silver are sold by the ounce coffee, tea, tobacco, spices, indigo, silk, cotton, and leather by the pound; meat by the stone; sugar, butter, rice, by the hundred-weight; coal, iron, copper, tin, lead, palm oil, logwood, hemp, flax, by the ton; wool by the pack. For statistical purposes it is convenient to take one unit, the metric ton = a cubic meter of water, and nearly equal to the English ton, to express the imports and exports, and the quantities of all articles sold by weight. This would facilitate comparison. The quantities sold by volume, such as wheat, fish, oil, wine, and spirits, might also be expressed by one unit—the metric tun, the bulk of water weighing a metric ton. The qualities and prices of some articles, such as wheat and spirits, are regulated by the weight of equal bulks, or by the specific gravity, which is easily expressed as it is the weight of a metric *tun* of the stuff, when a metric *ton* is taken for unity. Cloth, linen, calico, and silk, are sold by linear units, which are exceedingly objectionable, and should be converted into square units for statistical purposes.

In mechanics a unit of this kind is used; a pound weight raised a foot is called a unit of work, and 33,000 such units of work in a minute, form the further unit—Watt's *horse-power*. The unit of work may be called a double unit, inasmuch as it involves two elements—weight (*pound*) and space (*foot*), while the horse-power takes in time (*minute*), and is a treble unit. The French use a similar element thus compounded: the horse-power is 75 *kilograms* raised a *meter* in a *second*. Remark that two of the elements of this unit are intangible. Chemistry furnishes examples of compound units in its binary and ternary atoms. In statistics, double and triple units are in use; thus when I say the rate of mortality in a regiment is 2 per cent. per annum, I employ the double unit, a year of life. The years of life are found by multiplying the time in years into the mean numbers living. The strength of a regiment is 1,000, and the average deaths are 20 in a-year, 5 in a quarter, so the mortality is as above stated; but if the men die at the rate of 20 in a quarter, you have 20 deaths to 250 years of life, and the mortality is 8 per cent.

These compound units are the sources of frequent fallacies; thus if the population is compared with the deaths in a quarter, a week, a day, or any short interval of time, the apparent mortality is reduced to any extent. In reckoning interest and profit-rates, 1*l.* under investment a-year is the double unit; if the dividend on 100*l.* is 2*l.* half-yearly, the rate of profit is 4*l.* a-year.

The rate of profit is found by dividing (1) the profits by (2) the capital multiplied into (3) the *time*.

Inattention to this principle is the source of some of the common fallacies on the income tax. Thus if two persons are taxed equitably

on their property, they are taxed in proportion to its amount and to the time it is under the protection of the State: if A pays 1*l.* on 1,000*l.* in a-year, B is not fairly treated if he is made to pay 1*l.* every three months. The sophist assures B that he pays at the same rate as A, keeping out of view the fact that the taxable unit is compounded of value and time. Income is an indication, but not a measure, of property, and if A has a sum under investment in one way, he may have to pay at the rate of 6*d.*, while B with the same amount of property may now have to pay 10, 20, 30 sixpences as his quota of the year's taxation. A life income of 1,000*l.* a-year on men of 20 and upwards, at 5 per cent., is on an average worth 11,712*l.*; while at the same interest, the same income in perpetuity is worth 20,000*l.* The owners of two properties taxed upon the same unit of value, pay 11,712*l.* and 20,000*l.* as their quota of the year's tax; under an income tax the same premium is exacted from properties of totally different values.

The first step in every statistical inquiry is to determine the value of the units to be employed, be they single, double, or multiple. Thus if you find that the mines of a country yield 5,000 tons of copper ore, while the mines of another yield 10,000, these are only preliminary units; the final statistical unit is the ton of copper ore. So of all the minerals the ton of metal is the final unit. The heating power of coal is the element of value, and as it can be measured, it should supply the final unit.

In the statistics of products it is necessary to take time and space into the final units of value; thus, coal at the pit's mouth is worth say 5*s.* a ton, and at this price 40,000,000 tons are worth 10,000,000*l.*; but the consumer pays 10*s.*, 20*s.*, 30*s.*, 40*s.* a ton for this coal, and its cost in consumption may be 40,000,000*l.* This comprises the profit of the coal merchant, the interest of capital, the coal dues, and the cost of transport, which varies with the supply of horses, roads, canals, railways. Our exports and imports differ in value in the home and foreign market. The value of products should be determined at every stage; thus we should follow wheat from the market till it becomes (1) flour, and (2) bread, and take care that in all these cases the units are so like in all their aspects as to admit of comparison. It does not follow that two countries which have the same numbers of cattle are equally rich in that kind of stock; the herds of cattle may differ in size, in age, in their amounts of produce of milk, butter, and meat—in the quality of all their products. Horses differ still more in excellence. In Smithfield sheep are not bought by the head, but by the stone; the offal is sunk, and the price varies from 6*d.* to 8*d.* per pound in inferior and prime sheep. The butcher gets at, and the statist uses, the pound of saleable meat as the final unit. All the elements which

the statist wants here are taken into account in the *value* of stock and of its produce; with this he gets comparable units in every climate. Again, take land: land measures vary. Statists gain a step by employing as their unit a hectar, or a square of 100 meters to the side; it is a large acre, of which our present acre is four-tenths. The United Kingdom contains (31,367,507) thirty-one million hectars of land, rather more than a hectar to each person. This is the proportion of land to people in a populous country; and the hectar is a convenient unit of area. England has 15, Scotland 8, and Ireland 8 million hectars of land; the population being 20 millions in England, 3 millions in Scotland, and 6 in Ireland. The proportions in ten—are England 7, Ireland 2, Scotland 1; on areas related as 2, 1 and 1. Ireland has still twice the population of Scotland. Italy has 26, Prussia 29, Spain 51, France 63, Austria 64 million hectars.

We come to States of a very different magnitude; the United States of America hold 440, Turkey 474, Russia in Europe 544 million hectars. Including the whole of their subject territories, the United States possess 730, England has 1,145, and Russia 2,133 million hectars. We do not accept this unit in statistics as the final unit of land. Land is rich, poor, or waste,—cultivated or uncultivated; and a hectar in the centre of London, in the vale of Gloucestershire, on the banks of the Lena in Siberia, in Melbourne, and in the middle of Australia, is a very different thing. All the chief elements that we need are summed up in the mean *value of a hectar*; and in the usual divisions of hectars into arable, meadow, pasture, forest, water, waste. The value of the land of the United States certainly exceeds that of the Russian Empire; in the absence of agricultural statistics, we do not know the value of our land, but the value of the fixed property of the Isles of England exceeds the value of the fixed property in either the Russian or American dominions.* The *value of a hectar* is the final land unit.

As all the mechanical forces are expressible in units of weight, so the values of land, of all property, of all products, are expressible in units of gold; and we may either measure those values, and express them in tons, or in any pieces of equal weight of that metal. We take the sovereign for the statistical unit of value, because it is in use; for the same reason as engineers take horse-power as the unit of work.

What are we to say to the human unit? Here also distinctions have to be drawn. As hectars differ, so does the average man of different states. Besides the divisions incidental to sex and age, the work of different races of men varies in quantity; a navvy, a

* The true value of real estates and personal property in the States was extended at the census of 1860 to 3,232,000,000*l.*, taking $\text{£}5$ to 1*l.*

Siberian peasant, a Hindoo, a Negro, a Chinaman, an Esquimaux, do very different quantities of work in the year.

The mechanical force of a country is the sum of the working forces of its population, with its steam-engines, horses, winds, waters, which can all be measured by the engineer's unit of work. Adam Smith proposed to employ a unit of labour as the unit of value. The wages of men express the value of their labour in gold, and from the mean value of these earnings at different ages of life, the economic value of a man is calculated by taking the interest of money and the contingencies of his life into account. At the age of 25, the present value of the future earnings of an English agricultural labourer, after deducting the cost of necessary maintenance, is 246*l*.* The value of the mean worktime of artisans, artists, and professional men, varies indefinitely; and as it is evident that the human units differ, so the difference can be appreciated by the value of their works. Nations differ in their intellect as well as in their moral faculties; and the expression of these forces of the soul, whether we look at scientific achievements or vulgar errors, at virtues or crimes, is one of the difficult problems in statistics. It is by the correct appreciation of units—of the things signified by figures—that the statist is distinguished from the empiric who throws heaps of tables in our faces, and asserts that he can prove anything by figures.

After observation, discrimination of units, and expression of their numbers in figures, come the exposition of facts in tables or diagrams, and the determination of their relations by mathematical analysis. Logarithms facilitate the calculation of ratios; and the calculus of probabilities enables the statist from the past to predict the future within determinable limits of error. Prediction is a function of this, as it is of all the sciences. The exposition of doctrines, and the use of them in argument, to induce men to follow a course of action, is an important part of statistics; and as it is connected with politics, has been carried to a high pitch of excellence in England. Several of the pieces of Burke, some extant speeches of Pitt, and in recent times the speeches of Huskisson, of Peel, and of the Chancellor of the Exchequer, as well as articles in the newspapers and reviews of the higher class, offer examples of this order of eloquence.

Statistics admit of many practical applications, and this naturally commends the study to the minds of Englishmen. I will mention an example. In the first place, as we have had a minister, we have had statistics of trade, and from the time of Davenant until the present day, when the Statistical Department is presided over by Mr. Fonblanque, the statistics of trade have formed the basis of a large field of economical reasoning. They guided Huskisson, Peel, Graham, and

* *Statistical Journal*, vol. xvi, p. 43.

Gladstone in legislation, by showing the exact effects of rates of duty on the revenue, and on the property of the country. Yes, the statistics of Deacon Hume, of Porter, of Tooke, of Newmarch, of Wilson, of McCulloch, and of our blue books, have accelerated the march of free trade, and banished protection from the shores of England. Statistics, pursuing her through the world, are demonstrating her disastrous influences in every land. Figures show, year after year, that every country which isolates itself from mankind by prohibition, no matter what may be the natural riches of its soil and climate, withers under the influences of protective tariffs. The people out of the open air of competition grow idle and weak. The imports of 1861, in England, were of the value of 217 millions sterling, and the exports of 160 millions, including 35 millions of foreign and colonial merchandise; the revenue was 70,600,000*l.*, and exceeded the expenditure. What do the statistics of Austria show us? Why in 1861-62, her total imports were 22 millions sterling, her exports 34 millions; her revenue 40 millions, her expenditure 51 millions; and as a consequence her debt is accumulating in geometric progression; her credit is low, and her paper is depreciated. This magnificent empire, of 36 millions of the finest races of Europe, with minerals in the Carpathians, Bohemia, and the Alps, with 64 million hectares of land stretching over the rich plains on the Upper Elbe and the Danube, is thus crippled, by a good Emperor and a patriotic Chamber, on the speculation that certain manufactures will prosper ultimately in Austria if they are nursed and encouraged at the expense of the nation for some indefinite time.

France has been drawn towards free trade by statistics; her exports are 123 millions sterling in value; and by the development of her resources, she does not yet falter under an annual expenditure of 83 millions sterling.

Spain again, which has broken the chains of the Inquisition, is still in the fetters of protection, that is, still makes her people pay dear for goods to satisfy their wants; her imports are of the value of only 15 millions sterling, her revenue is only 20 millions, and she is unable to pay her debts, so that she is without the legitimate credit which a nation containing many men of the nicest honour can justly claim.

The United States' statistics offer the saddest illustration of the effects of levying protective duties; their imports (1860-61) were 67 millions sterling; their revenue was 10 millions in 1861-62, exclusive of loans, and their expenditure, it is said, was 114 millions; and higher rates of import duties on the class of articles manufactured in New England will necessarily reduce the amount of revenue. The present war was kindled by combustible materials, of which protective duties form no insignificant item.

The statistical argument in favour of free trade is accumulating: it gains fresh force in every table, and will in the end lead all nations to exchange their products freely.

Another thing statistics does; it enables Governments to count the cost of war, and to weigh its results against its expenses.

There can be no doubt that statistics, by disclosing the laws of life and reproduction, tends to improve the health and moral condition of the people; to point out the causes of disease; and to prove so plainly the utility of sanitary measures, that the people become willing to pay the expenses. In England the Registrar-General has, during twenty-seven years, shown how much the public health is deteriorated by destructive causes; so in our towns they are in the course of removal; the Registrar-General of Scotland and Dr. Stark have lately done the same there, and in the present year the Registrar-General of Ireland and Dr. Burke, following Sir William Wilde, have entered the field. Our army has been invigorated by statistics; and the Commission over which Lord Herbert first, and after his death, Lord Stanley so ably presided, has proposed to endow India with the sanitary institutions of England. Under the eminent man who now governs India, the English race, which has hitherto languished in that paradise, will, we may hope, taste the fruits of the tree of life, and perpetuate itself in the tropics among the natives who also descended from the original Aryan stock.

Statistics, it must be confessed, has done little for mankind yet, in comparison with its vast powers. Innumerable social problems are still unsolved, and politics, which *Alembert* justly pronounced, in the "*Cyclopædia*," "perhaps the most difficult of all the sciences," is every day making fresh demands on statistics. Take the Balance of Power. How are political powers to be measured, and how is the statesman to construct his parallelogram of forces? In past times France, the Emperor, and England were the principal powers; and the problem had then the complications of the three bodies in mechanics, but England, France, and Austria have now Prussia and Russia by their sides, to say nothing of Turkey; Spain is rising again, and the Italian sword is asserting its place; the two States of America disjoined, will be two of the great powers of the world, with which Europe will have to reckon. Italy was comminuted into small States; it is now one power. And latterly Germany—still in two great masses, and a multitude of fragments, which have been as dust in the balance—coalescing, has planted herself on the neck of the Baltic in the face of Russia and Sweden, England and France looking on. Here is a mass of 72,000,000 men, with its due proportion of needle-rifles, and a navy, not yet formidable. It has nearly, but not quite, twice the population of France

(37,386,313) with her rectified frontier; against which Denmark, with only 2,605,024 people, or, excluding German Holsteiners, two millions, dared gallantly to defend her frontiers; but which the Emperor of the French did not deem it prudent to encounter for the sake of an old ally of France in the company of England, with the coveted Rhine—that German river—before his armies.

This population of the German States is split up (our statistics show) into 36 million Austrians, 18 million Prussians, and 18 million Germans comminuted in cities and principalities—but scarcely powers. And if it has France on the west flank it has Russia, with what may be taken at 66 million people, on the eastern frontier, not very distant from Berlin and Vienna. Germany has also unfriendly races within its limits—Poles, Hungarians, and Italians who divide Austria from the sea. Between Germany and Russia lies Poland, in pieces and ashes, but still exhaling her indestructible soul in one flame to heaven. The fine Scandinavian race has fallen back behind the Baltic, before the masses of Russia and Germany, and stands at bay, looking towards England. In the south is looming, we are reminded, the possible coalition of the Latin races in face of the descendants of those Germans who broke the power of the Roman empire. Over the Atlantic, 8 millions were added to the population of the United States in ten years; and at the same rate of increase, the people on the ample territories will amount to 42 millions in six years, to 56 millions in sixteen years' time. Our colonies are increasing at as fast a rate, and repose secure in peace under the sceptre of the Queen. How are all these bodies to be balanced? How is the power of each State to be measured?

The first step in the solution of the problem of equilibrium is naturally the determination of the population, and of the value of the wealth or credit which nerves the sinews of war. When this is done for each State, the unit to get at is the precise worth of the fighting man and officer; the numbers of such units in service and in reserve; the arms, fortresses, and ships. It was enough not long ago to count the ships of the line, frigates, and other vessels; for when the naval historian had told, in addition to the number of ships and men, the number of guns at Aboukir or Trafalgar, his readers were satisfied. The unit of naval force is now by no means so simple; it is compounded of the velocity of the ship and its resisting power—as well as of the weight, velocity, and destructive force of its shot and shells. Strategic position, administration, fertility of military genius, are all elements of power to be taken into account. What minister knows at this hour the military force in war of his own State with any degree of accuracy? or can weigh the force of other States in his balance? What means has he of judging

of the number of possible adverse or favourable combinations? As the number of States increases, the possible combinations increase more rapidly. Thus take England, France, or Austria, and there are only three possible combinations of two against one; throw in Russia and Prussia, and the possible combinations are ten of three powers against two, and five of four powers against one; and one, two, or three may be neutral while the rest are at war. England, France, Prussia, Austria, Russia, Italy, Spain, Turkey, the Federals, and Confederates, constitute ten States of 293 millions; that is 29·3 millions to each on an average; and ten combinations can be formed of nine against one, 210 of four against six; in all 511 war combinations. Then if we introduce the element of neutrality, the combinations are still further multiplied; and there remains the separate probability of each alliance. After all the resources of statistics are exhausted, enough is left to task the intellect of the most sagacious minister. We are beyond the age of Government by instinct; and the political questions of the day in England demand new light from science. In the decision of the course to pursue in all the questions of the balance of power—of peace and war—the country has the wisdom of experienced ministers like Lord Palmerston and Lord Derby to rely upon; but the Queen's Ministers know the difficulties of the problem, and will appreciate the value of the facts which they require from statistics—and which the Houses of Parliament require—to aid them in deciding questions of international policy. In steering the vessel of the State over the ocean our captains cannot now entirely rely upon their stars; they must consult their "Nautical Almanack."

Besides the problem of equilibrium, there remain others of equal difficulty. Aristotle, Comte, and other thoughtful theorists, looked with favour on the organization of mankind in small States. But while small States often exhibit great intellectual activity, and in Judea, Greece, Italy, Switzerland, Holland, Frankfort, Weimar, Würtemberg, and elsewhere, have nurtured men of transcendent genius—they exist now by sufferance; they exert little direct influence on the political affairs of mankind. Property is less secure in these dominions than it is in large States; and their defence is more difficult, and in proportion much more expensive. Thus, to say nothing of smaller States, Bavaria, to keep the same army in the field as Prussia, must draw four times as deeply on the resources of her people. Sweet are the charms of small Courts and local Government; yet the people of small States are, as in Italy, yielding by degrees to the soft compulsion of powerful neighbours; and the great continental powers, as their population increases, evince a passion for the sea, to which the small States upon the coasts may not for ever offer an effectual barrier. Still a valiant nation in

hearty cohesion, feeble in aggression, cannot be subjugated by a nation of four or perhaps ten times its magnitude; as was seen in the cases of Greece and Persia, of Prussia under Frederick—who with 5 millions of people fought 100 millions—in Austria and Switzerland, Spain and the Netherlands, England and America. The population of England was about 10,530,000, and that of the whites in the States 2,614,000, holding half a million slaves, in the war when the colonists resisted brave British armies, until the intervention of France and other European powers closed the unavailing contest.

In spoiling Poland three great powers participated; and Hungary in the war of 1848 was only recovered by Austria with the aid of Russia. Each of the great powers of Europe has fought—and is able to defend its existence for a time against—Europe in coalition, so long as the hearts of the people are loyal.

The solution of the problem — can 19 Free States conquer 15 Slave States—can 19 millions of people subjugate 8 millions of freemen holding 4 million slaves?—might have prevented a desolating war. And statistics supplies but one solution.

The census was taken in the United States in 1790, eleven years before the first English census; and the last report by Mr. Kennedy is one of the fullest of which statistics can boast. From this it appears that the 697,897 slaves of 1790 had multiplied so rapidly, that they amounted to 3,953,760 in 1860; and this increase proves that the physical condition of the slaves and their health are, as the Southerners tell us, good in a warm climate. They cannot possibly, in the aggregate, like the blacks in Cuba, be worked to death by the masters of English blood, and their conduct during the war confirms this inference. The present Southerners did not, as Sir George Lewis remarks of the Greeks, invent slavery; they inherited it under their laws, and are in the same uneasy situation as masters would be here, who had paid their servants wages for life in advance. With the growth of population, the equitable abolition of slavery in America, like the abolition of serfdom in Europe, is only a question of time, to be worked out in peace as the prosperity of the South increases; yet the institution of slavery is so much at variance with the principles of liberty and of the American constitution, that its speedy extinction was a sacred aspiration in the north, and was shared in England. The passionate war, which has a tragic interest, has shown that though the British race has undergone changes, such as Sir Charles Lyell pointed out, it has lost none of its valour, none of its endurance and none of its military genius in America since the days of Washington. It is rather exposed to the reproach Hume addressed to England, of fighting on uselessly in stubborn anger, when the object of the war is attained, or is unattainable,

than to that of imitating the new fashion set by the Emperor of the French in the Crimea and Lombardy.

As the war proclaims the power of two nations, Kennedy's ample statistics fill us with astonishment at their achievements in all the arts of life; and if Frederick in Prussia, and Peter in Russia, are justly, for founding two great powers, called Great, that title cannot be withheld from the two nations sprung from the men whom England sent over the waves of the Atlantic.

In Bath Abbey—I am reminded—lie quietly the ashes of Malthus, one of the fathers of statistics, and one of the founders of this Section of the Association at Cambridge. In his celebrated work he deduced from all the information then extant respecting the populations of the earth, the well known law that population increases in geometrical progression. The first philosophic naturalist of his age assures us that this law rules in every species of plant and animal; and that he derived from Malthus the conception of the struggle for existence, which, with the tendency to variations of form and natural selection always operating in favour of the best, through the millions of ages which our President unrolled before us last night, wrought those miracles of organization which we now regard with wonder and awe.

Malthus did not, however, sufficiently advert to one great characteristic of man, which distinguishes him from all his fellow creatures. The lion and the eagle prey upon the fawn and the lamb, but do not breed them; and even the busy bee only gathers honey from flowers existing. Man, by his industry, creates flowers, fruit, grain, and all products; his science places the forces of nature in his hands; his powers of transport give him the use of the lands of all climates; and hence subsistence has increased during the present century in a more rapid geometrical progression than the numbers of the people in England. Hence her numerous cities, her full ports, and her cultivated fields; hence the States of America, hence Canada and its sister provinces, hence the colony of the Cape, Australasia, and our Indian empire. If, like the power of Imperial Rome, whose ruined temples lie under our feet in the streets of Bath—England should ever decline and pass away—she will not have existed in vain; she will leave eternal traces of her life in the life of mankind; and our dry fossil figures, read by the Macaulay of a later age, will reveal the works—in America, in Australia, and India—of a great nation. But hitherto no signs of decay are visible; our population is to-day in its youth; it has proportionably more young men in it than any other people in Europe; who in no respect, take them in the ranks of the Volunteers or in the Sections of the British Association, need fear a comparison with their contemporaries: the English race—the

greatest of the nationalities — amidst all the coalescing nations, yields all the signs of being able to hold her own for ages to come. Yes—

Thou shalt be the mighty one yet !
Thine the liberty, thine the glory, thine the deeds to be celebrated,
Thine the myriad-rolling ocean, light and shadow illimitable,
Thine the lands of lasting summer, many blossoming Paradises,
Thine the North thine the South and thine the battle-thunder of God.*

Let us, gentlemen, work hard in that humble field allotted to us ; and by doing our duty endeavour to make the statistics of our day worthy of the country in which we live. Above all, let us never forget at our meetings how much we are indebted to the men no more among us, who have made us heirs of their labours, and to whom we are bound by natural piety. Among those names this year to be especially remembered is that of Sir Alexander Tulloch, K.C.B. He was a Fellow of the Statistical Society, to whose *Journal* he contributed valuable papers ; with Henry Marshall and Dr. Balfour he laboured successfully in army statistics ; he organized the pensioners ; his ability in administration induced the Government to send him with Sir John McNeil to the Crimea, where he rendered essential service to his country, helped to save the army, and afterwards endured a persecution which he merited only by honesty and endured with brave constancy. M. Villermé in France is a great name gone ; we may place it after that of M. Quételet. His contributions to statistics are clear, truthful, and practical. Like the Earl of Shaftesbury, he strove to do good to workmen by judicious regulations. In Germany Dr. Casper, a most amiable and excellent physician, has left works which are often cited in England. Let us strive, gentlemen, to continue the labours which these men began, and to imitate their virtuous love of statistical truth.

* Tennyson.

On the COMPARATIVE MORTALITY of LONDON and PARIS. By
WILLIAM TITE, ESQ., M.P., F.R.S.

[Read before Section (F), British Association, at Bath, September, 1864.]

IN the course of last year I read a paper at the meeting of the British Association for the Advancement of Science, at Newcastle, on the cost of the Paris improvements, in which I was naturally led to notice the effects of those operations upon the health of the inhabitants of that city. It was reasonable to expect that the advocates of the French system of the management of public works should have been disappointed at what they might have considered the unfavourable conclusions that I then drew from the premises that were before me; but I was not prepared to expect that they would have gone so far in their admiration of that system, as to have contended that there was reason to believe the results of it had been to establish anything like an equality in the rates of mortality prevalent in the two cities of Paris and of London. A journal of some importance, however, has done so; and it has given some statistics to show the bearings of the improvements that have recently taken place on the salubrity of Paris, and, so far at least, to throw discredit upon the results that I had arrived at with regard to the effects of the recent changes made in that city. I therefore thought it would be worth while to institute a comparison between the mortality observed in the two cities in question; as much for the sake of clearly showing their present condition in this respect, as for the sake of establishing the facts that I had alluded to in the paper before referred to. The subject is in itself far too important to be allowed to remain in obscurity; and I also hope that the attempt that I am about to make, may succeed in drawing attention to the hygiènic considerations that are involved in it.

I must, at the outset, observe that researches into the rates of mortality in Paris are enshrouded with a great deal of uncertainty and mystery, which is partly to be accounted for by the strict bureaucratic form in which they are drawn up, and partly by the natural desire of the *employés* of the French administration to associate their names with the publication of the statistical information that would be likely to influence the action of the Government in all the cases where they might seek for information. In France there is also a great confusion in the manner in which the *Etat Civil* is kept, in consequence of the interference which is there allowed to

prevail in the rights and duties of the Prefects of the Seine and of the Police, both of whom are indirectly responsible for the true statement of the various acts that form the subject of the *Etat Civil* to the Minister of Commerce. The yearly returns which are made by the subordinate administrations to the Minister of Commerce are prepared exclusively *after* the termination of each year; they then go through a kind of examination in the bureaux of the minister; and are afterwards published, by his authority, in the official journals. It follows, from this system of circumlocution, that it is at least two years before the public can obtain any information about the state of the population on any particular occasion, even if the returns were themselves of a character to be implicitly relied upon. But, unfortunately, this is not so in all cases with reference to the deaths of the citizens; for, although the law is very strict in requiring a certificate from the "*médecins des morts*," as the officers charged with the performance of that duty are called familiarly, there is no kind of guarantee that the strict cause of death should be accurately defined in the declaration the latter are obliged to make. It is true that this objection would only apply to the correctness of the returns so far as they might affect the causes of death; they would remain correct, so far as the numbers went, let the causes be as mistaken as they might; but this must always diminish the importance that would otherwise be attached to the returns, by causing them to be regarded as giving a false, or at least an equivocal, statement of the health of the city at the particular period. The making it necessary to have the cause of death certified by the police doctors is, in fact, a complete delusion. They can only know the causes of that event, in the majority of cases, from the representations of the friends of the deceased, and from the casual inspection of the last prescriptions by the medical attendants, and the danger of mistaking indications such as these must be evident to all who have followed this class of investigations. It is, however, mainly with regard to the long delay and the want of publicity that prevails in the neighbouring capital in this respect, that I, myself, have found my researches into the mortality of that city to be deficient. The Paris returns form, indeed, a marked contrast with the English returns, which are an honour to the care and skill with which they are published *weekly* by the Registrar-General.

The great changes that have recently been made in Paris, by the fact of the extension of the limits of the city to the fortifications, which took place on the 1st of January, 1860, has moreover introduced very great obscurity into the subject so far as regards the comparison with past epochs; because not *only* have the limits of the town itself been extended, but the *circonscriptions* of the several arrondissements have been altered in order to simplify the working

of the administration. This circumstance would naturally entail great difficulty in the identification of the deaths that are to be attributed to the various arrondissements of Paris; and this difficulty has been increased by the returns of the census that was taken in the month of June, 1861. The consequence is that the official statistics of Paris can only be compared with those of London with anything like a degree of certainty as far as the year 1860, insomuch as the mortality of the different quarters is concerned. The mortality since that period, it is true, has been given in the "*Annuaire du Bureau des Longitudes*," the "*Annuaire de l'Économie Politique*," in the "*Statistique Générale de la France*," and in the works of M. Legoyt and M. Trébuchet,* &c.; but in all these cases the character of the information which is given is very general, and therefore unsatisfactory; and it is, moreover, very much behind the requirements of the day, which certainly are such as to call for the prompt publication of these returns. The fact is, that although the French Government incurs a great annual expense in the publication of official documents, it is very badly served in this respect; for there can hardly be conceived a more ridiculous parody on official statistics than that which is published with respect to Paris, only appearing at intervals of two years after the returns are made up, does not make any allowance for the gradual increase or decrease of the population, and does not give any details in the meantime as to the state of the public health in the various arrondissements that are specially concerned.

It is always to be observed, with regard to the mortality of Paris, that the attempts to ascertain the laws that regulate the rate of deaths in that city, have been exposed to sudden causes of disturbance that have not prevailed in London, in the period that is usually considered to be the most likely to lead to correct views upon the subject. Thus it is evident that a comparison of the mortalities of Paris and London, would only be of value on the condition of extending over a considerable period of time; but the correctness of the average thus arrived at would be at once invalidated by the occurrence of a great social revolution of a character to influence the prosperity of the country. In the course of the present century there have been no less than four great revolutions of this kind in

* The "*Statistique Générale de la France*" is published under the superintendence of the Minister of Commerce, and it is drawn up by M. Legoyt from the papers communicated to him in his capacity of Chef du Bureau de la Statistique Générale. M. Legoyt is also the perpetual secretary of the Société de Statistique de Paris. M. Trébuchet is the manager of the Société d'Encouragement, and he was for some time connected with the statistical department of the Prefecture of Police; his works upon the mortality of Paris are principally to be found in the "*Annales d'Hygiène*," and in the "*Rapport Général sur les Travaux du Conseil d'Hygiène Publique*," for the years between 1849 and 1858 inclusive.

the neighbouring capital, that have totally changed the face of the political world, and have modified the comforts and the conditions of existence of the people exposed to their influence; whilst the cholera, the bad harvests, and the consequent dearness of food, the wars, and the street fighting, have combined to produce a higher rate of mortality than has fallen to the lot of our more favourably circumstanced capital. The uncertainty that is thus attached to the indications of the mortality of Paris, must always throw a great degree of doubt upon the comparisons that may be made between it and the rate observed in London; but this cause of uncertainty may be considered to have disappeared, to a great extent, in the period that is selected for examination, namely, the one between the year 1853 and 1862, and the period selected is, moreover, the better adapted to allow safe conclusions to be drawn from it, as it has witnessed the great operations that formed the subject of my previous paper. I wish it, however, to be distinctly understood that, in giving what seem to me the results of the London and Paris rates of mortality, I do not pretend to give them with all the accuracy which ought to prevail in such important documents. For the Paris rates, in my judgment, can only be regarded as close approximations.

The inquirer into the mortality of the two cities cannot but perceive, at the outset of his inquiries, that they are situated under very different hygiènic conditions, and that these conditions are greatly in favour of Paris. Thus, the geological nature of the soil—the kinds of food, both solid and liquid, that are there consumed—the character of the materials used in house building—the climate—and, in fact, all that tends to make out-of-door life agreeable—are greatly superior in the case of Paris to what they are in London. Paris is situated upon the tertiary limestone formation; London is situated upon the impervious clays of the same formation; the one is dry, the other must be damp through a great part of the year; whilst the surface waters of the former are thus enabled to flow off from the ground or be absorbed in it, and the latter remain on it. The situation of Paris is higher above the level of the sea than that of London; and the strata that occur between the levels of the former city, are all of them highly permeable, being mostly calcareous, excepting where they are covered with the marls and clays of the gypseous formations, and where they are occasionally capped with the clays and gravels of the drift period. It would hardly be necessary for me to point out the advantages which Paris enjoys in the character of the building materials that enter into the architectural effect of that city to so great an extent; but I must be allowed to remark upon the advantage they offer in the hygiènic conditions of the inhabitants in affording them rapidly absorbing media for any

dampness that may be in the air. The kind of food that the inhabitants of Paris can command is, moreover, better in many respects than that which can be met with in London, if it were only on account of the ease with which wine and fruits are obtained there; whilst the conditions of climate are as favourable to the production of animal food and the growth of cereal crops. Yet, with all these advantages, the mortality of Paris is greater than that of London.

For we find that in the “Statistique Générale de la France,” and in the summary of the weekly returns of births, deaths, and marriages, issued by the Registrar-General, the mortality of Paris and London may be taken as being represented by the following figures:—

	Paris. Rate per Cent.	London. Rate per Cent.
In 1853	2·95	2·44
„ ’54	3·51	2·94
„ ’55	2·99	2·43
In 1856	2·43	2·21
„ ’57	2·73	2·24
„ ’58	2·73	2·39
„ ’59	2·86	2·27
„ ’60	2·53	2·25
In 1861	2·57	2·32
„ ’62	2·49	2·36
	10)27·79	10)23·85
Average of 10 years	2·78	2·39

But this rough way of ascertaining the average number of deaths can hardly give anything like a fair statement of their proportions. In the ten years thus chosen, we find, indeed, that in Paris the average above quoted has been exceeded in the years 1853, 1854, 1855, 1857, 1858, and 1859; the rate has been more favourable in the other years, that are respectively uninfluenced by the abnormal causes of mortality arising from the cholera, the Crimean and the Italian wars, and the scarcity that prevailed in 1859. The London mortality, it is to be observed, presents a much more steady rate; and this is the more remarkable, that the rate of the increase of births over deaths has always been much greater in the latter city than it has been in the former. Thus, we find that the proportions of the births to deaths in the two cities are as follows, in the years 1860, 1861, and 1862, which are purposely selected as being as nearly as possible average years of the general rate:—

	Paris.		London.	
	Births.	Deaths.	Births.	Deaths.
1860	51,056	41,261	92,825	61,617
'61	53,570	43,664	96,389	65,001
'62	52,312	42,185	97,418	66,950

The population being respectively taken at 1,696,141 in Paris, and at 2,859,778 in London, which represents the average of the above years, the excess of births over deaths in the former case would be represented by the following figures. Thus the rate of increase from this cause would be at the rate of 0.58 per cent. of the inhabitants of Paris; whilst it would be at the rate of 0.62 per cent. of the inhabitants of London. But this proportion does not in its effects stop here, as it is known that the mortality in the earlier ages of human life is considerably greater than it is in the subsequent stages. In Paris, it appears that about 15 per cent. of the whole number of children born, die in the first year of their existence; and there is little reason to believe that the hygienic conditions of London can be more favourable to the preservation of infantile life. Not only, therefore, has London to support this increased cause of mortality, but it has to compensate for the additional mortality that ensues from this cause: there are more children born in London, in proportion; they die in greater numbers, and their deaths, therefore, increase the average rate of mortality in an abnormal manner.

It may be said that more people die in Paris than in London, proportionally to the population, from the tendency of the inhabitants of the *banlieue*, in the former case, to resort to the hospitals of Paris in all cases that are likely to terminate fatally; but the same law holds good with London, and the mortality of the latter city is still further increased by the deaths of the children who are there brought up, whilst it is notorious that the Paris children are sent away to die where their numbers do not affect the town mortality. It may, however, be necessary to make an allowance for this cause, and for the number of women who resort to the hospitals of Paris to be there confined; but the proportion of those who die away from their residence, must always be small in comparison with the bulk of the population. In Paris, however, there were, in the year 1862, as many as 12,235 deaths recorded as having taken place in the civil and military hospitals, in the prisons, and bodies taken to the Morgue; when in London there were only in 116 public institutions as many as 11,313 deaths recorded. I have no means of com-

paring the numbers of women who resort to the means afforded them by public charity to avoid the expense, or the danger of exposure, that may attend childbirth in England, for our returns do not embrace that class of statistics; but in Paris there were as many as 6,522 births registered as having taken place in the hospitals, out of the total number of 52,312 registered in the year 1862. It may be that the facilities that are thus offered for the indulgence of the passions, have a tendency to promote immorality. In Paris, for instance, in the year above quoted, there were as many as 14,591 children born out of wedlock, or as many as $\frac{1}{3}\frac{9}{10}$ ths of the total number of births. How far this may have influenced the rate of mortality, it is not my province to inquire; but the fact that a greater number of children die still-born, when they are conceived in an illegitimate manner, is well known; and the proportion of these births in Paris cannot be left out of account. The official authorities reckoned that as many as 4,041 infants died, either before they were registered, in Paris, or were not brought into the world alive in the year 1862.

I cannot help, for my own part, attributing great part of the excess of mortality, that I have thus shown to exist in Paris over London, to the dense crowding that takes place in the houses that the population of the former city occupy; to the bad hygiènic condition of these houses, as far as ventilation, the removal of refuse, and the water supply are concerned; and to the bad laying out of the town originally. In Paris, there were as many as 35·17 persons per house, according to the statistics collected in 1856; and everything that has been done in that city has had a tendency to increase the number, by driving the poor from their lodgings, and forcing them to crowd themselves into the places left for them. In London, the number of inhabitants per house is certainly less than 7·72, and the consequence is that they attain much nearer the nominal conditions that are observed to take place in France in country districts. It is hardly possible to define the density of the population of London, so widely do its limits extend; but I do not think that I should err much if I said that the population of London occupied four times as much space as that of Paris. On this point, however, the official statistics fail us, and I am left to the indications of analogy and comparison, and to M. Legoyt's observations, which certainly are unfavourable for the inhabitants of Paris, who are crowded into lodgings that hardly allow of their breathing uncontaminated air.

The hygiènic conditions of the houses of Paris seem to me to be very defective, in respect to the ventilation of the apartments that lie at the back of those fronting the streets, to which access is attained from a court-yard. It is notorious that the police regu-

lations on this score are very deficient, and that while they carefully prescribe the width and height to be followed upon the elevation towards the thoroughfare, the proprietor is left almost without control as to the buildings that he may erect away from public gaze. It is by no means rare to find blocks of houses that are 14 mètres high towards the street, separated from a back building by a courtyard of only 6 mètres wide, or even less, and the air of the inhabitants of the latter is forced to be renewed in this well. But the worst of this state of things is, that the ventilation that is thus provided (and be it remarked that the courts that are built upon these conditions are those of the best houses in the new quarters of Paris) is very far indeed from being of a nature that is conducive to health, as the courts or areas are always more or less tainted with the air of the places, or provisions, for removing the refuse of the population. The habits of the best classes in France, in this respect, are surprising, and I cannot but attribute much of the excess of mortality that prevails in Paris to this cause. In almost all the court-yards that it has been my fortune to have visited in Paris, or elsewhere in French cities, there has been a "*villanous smell*," that must interfere with the healthy exercise of some of the more important functions of the body. This is particularly the case with the houses in the quarters of la Villette, the Temple, the Faubourg St. Antoine, the quarters Latin and Mouffetard; but the remark may be extended to all Paris. In the old parts of the city, too, the streets are narrow; they are badly planned; they want light and air; and though much has undoubtedly been effected in the way of improvement in these respects in the alterations that have of late been made, still much more remains to be done before Paris would be able to compare with London as to the ventilation or the salubrity of its houses. I wish it to be distinctly understood that it is not my intention, at present, to inquire into the manner in which house property is held in the respective cases of the two cities, though this must have a great influence upon the style of construction adopted in them. All that I am anxious to arrive at in this study are the causes of the increased mortality in Paris, and amongst these I place foremost the number of the inhabitants per house, and the bad conditions of the houses themselves.*

* I must be allowed here to remark, that I agree to a great extent with M. Leplay, the author of a remarkable work on the "*Réforme Sociale en France*," as to the influence of what he calls the *régime du partage forcé* in producing the state of things described in the text. The tenure of property in France is entirely freehold, and therefore there is every inducement for the landlord to derive the greatest possible returns from it; added to which, the fact that property of every description is divided equally on the occasion of the death of every individual holder, tends to destroy anything like a broad general view of the duties of the landlord. This is at least certain, that the tendency of the French law of inhe-

As to the drainage and water supply of Paris, it is, as I stated some time ago, still in a very rudimentary state. The sewers act simply to relieve the streets from the rain water and from the liquid portion of the house refuse; and the water supply is so managed, that in no case is it possible to command anything like what we would call "a high service." It is necessary to carry up by hand to the higher stories of the buildings all the water that is there consumed. It is calculated that there are about 700 kilomètres of roadway executed in Paris, but not more than one-half of this length has been sewered; and the system adopted *there*, is carefully to exclude all that we in London so anxiously throw into the sewers, and to retain it to rot under the houses in cesspools, to be emptied from time to time. On the north side of the Seine a very well-devised system of intercepting sewers has been lately executed, and the various subordinate sewers are, by this means, carried to a bend of the river by Asnières; but this measure does not deal with the whole of the city—it leaves, for the present, quite out of account the sewerage of the islands in the Seine, and it does not discharge any of the water that is brought down by the intercepting sewer on the south side of that river, which is poured into the Seine at Chaillot, a little above the "intakes" of the Chaillot waterworks. There may be reasons for retaining the solid *dejecta* of human beings in cesspools; but the system adopted in Paris cannot be regarded as a true solution of the social question of removing all such refuse from the houses in a manner that should be alike inexpensive and without inconvenience. I am far from thinking that Londoners have yet solved this question in throwing their refuse into the sea, or at least into the extremity of an estuary that communicates with it. But, at any rate, the system that has been adopted in London, removes from the houses themselves the evil that must attend cesspools; and it will enable us to study the best means of converting to some useful purpose the results of the plan adopted here. It is possible to lead the sewage matters that are collected on the south side of Paris to the north by means of a syphon; and to prolong the outfall from Asnières to the lower reaches of the Seine, beyond Argenteuil and Maisons, so as to employ the force of gravitation, to a certain extent, to distribute the matters brought down by the sewers upon the hungry soil that lines the course of the river. It is to be feared that it will be many years before this project can be entertained; but it must, I think, sooner or later, be brought forward. In the meantime, Paris labours under the disadvantage of being compelled to retain in cesspools the matters that are destined

ritance has much to do with the crowding of the population in the town districts; although the precise wording of the law does not bear anything like that interpretation.

to give fertility to the fields; all that can be got rid of by the sewers are the rain waters falling upon the high lands and upon the paved surfaces of the streets, and the liquid portion of the house refuse that is allowed to find its way into the sewers. All the details of the system adopted by our neighbours are admirably adapted to the discharge of the functions that they consider to be the proper ones to be performed by the sewers; the error has been, I think, in limiting them to the duty of drains, and not allowing them to be at the same time sewers. I should hesitate very much in questioning the arrangements that might be made by such men as MM. Belgrand, Rozat de Mandrès, Rousselle, Nouton, Huet, &c., were I not convinced that we are much nearer the solution of the difficulty that attends the disposal of the house refuse than the French engineers; and were I not also convinced that much of the extra mortality that is to be observed in Paris over that observed in London, is greatly to be attributed to the imperfect manner in which the former city is sewered.

I alluded to the deficient water supply of Paris as a cause of the increased mortality that there prevails over that of London, and it is to be observed that this mainly depends upon the peculiar tenure of the house property in that country. There lodgings are held under the proprietor of the freehold by the tenant directly; and they are very seldom let on lease, though, of course, the landlords are glad enough to secure good tenants, by making the occupation of the house agreeable to them. The consequence of this is, that the landlords do not, as a general rule, provide their tenants with the means of receiving the water in their separate *appartements*; and the tenants do not go to the expense that would be necessary for laying on the water, which, after all, would be in the direct interest of the landlord. In Paris the custom is, therefore, to lay on water to the ground floor of the houses, and this is done for one-half of the town. There are 25,000 subscribers to the waterworks out of about 50,000 houses that exist in Paris. The rest are obliged to content themselves with the water supply from wells, with what they may be supplied with by the water carriers, or with what the inhabitants may themselves derive from the "*bornes fontaines*," or the ornamental fountains; in all cases the quantity of water must be limited, whatever it may be in quality. Doubtlessly the system that is adopted in Paris, of allowing the water to flow in the gutters for two hours in the course of the day, is conducive to the cleanliness and the salubrity of the town, by thus providing the means of washing the whole surface of the roadway at regular intervals; but this is a poor compensation for the absence of water in the private drains, which must be considered to be to a great extent owing to the number of the "*bornes fontaines*," that are so numerous dispersed in Paris. The quality of the waters now distributed is not, either,

of an irreproachable nature, for the Canal de l'Oure brings into the city its waters charged with the impurities that it receives from the active navigation carried on upon it, and those it may contract in the course of its passage through the Bassin de la Villette; the waters of the Seine are contaminated by the nearness of their points of supply to the population; the Eaux d'Arceuil and du Près St. Gervais are excessively hard, and they participate in the qualities that are remarked in some of the private wells that are likewise sunk in the upper members of the Paris basin; whilst the waters of the wells of Grenelle and Passy are variable in quality, and have all the inconveniences attached to their origin. M. Belgrand has proposed a scheme for supplying Paris with a copious distribution from the Dhius and the Marne, which is considerably advanced, and which bids fair to remedy the defects that are now apparent in this respect; but it is not less the fact that up to the present day the water service of Paris may be characterized as I ventured to describe it some time since, and the English consumer would laugh at the small size of the vessels there used for the purpose of cleanliness; they are emphatically such as could only be used in a country where water has to be bought by the pail.

But with all the causes of increased mortality of the city of Paris over London, the fact still remains that a great and marked decrease in this respect has taken place since the year 1853, or shortly after the Emperor began to urge upon the city the necessity of making better provisions for the sewerage, water supply, street ventilation, and the reform of the house system, which have characterized the recent changes that have been effected in Paris. Of late years, indeed, the difference in the rates of mortality that have respectively prevailed in the two cities has been very slight; and though it might have been expected to have been in the opposite direction, still the diminution in that of Paris cannot but be a source of congratulation to the advisers of the Emperor, and an encouragement to the French authorities to persevere in the course that has already produced such satisfactory results. To the philosopher there may be something repugnant in the system that substitutes the will of one man for the wishes and wants of a whole population; but the Frenchman's ways are not as our ways, and they look for the initiation of every great reform from that which they have agreed to make the representative of the intellect of their country—the central Government. There may be, and doubtless there are, many objections to the extension of the debt of Paris for the gratification of the æsthetical fancies of the Emperor in laying out the lines of boulevards, and the creation of new *places* and squares in the interior of the city; but the results that have attended these works hitherto have been such as to make us seriously question whether there may not be a deeper question than the mere economical one involved in the solution of the problem

that is concerned in their execution. The inquiry into the rates of mortality, however, has thus far led to the ascertaining the fact that the mortality of London, with all its disadvantages (and they are manifold and manifest), is less than that of Paris by nearly 4 in 1,000, if the average be taken over the space of ten years; and of 13 in 10,000 if attention be only paid to the mortality of the year 1862.

There is a singular subject connected with the rate of mortality in Paris that I think merits careful analysis of the returns. It is that the population that would seem to be benefited by the changes that are being made in that city are apparently subjected to new forms of disease that go far to compensate for the mortality arising from the old forms they were exposed to, which are now disappearing. Thus there has been observed in Paris of late to have occurred many more deaths from intermittent fevers than were wont to take place in that city, and the number of fatal cases of pulmonary complaints has been considerably increased; the former are attributed to the exhalations that arise from the ground that is disturbed in erecting the new streets; the latter to the increased draught, and to the workmen breathing more dust than they were accustomed to. It would seem, then, that good and evil are very closely combined in this world; and the rate of mortality in large cities may be suspected to be subjected to certain laws that tend to re-establish the equilibrium that may for a time be disturbed. This reflection should not, however, induce us to delay the introduction of open avenues and broad streets; for, after all, the incidents I have referred to may be only temporary in their bad effects, whilst everybody knows that permanently the population must be benefited by everything that would tend to improve the sewerage, water supply, and ventilation of their residences. In all this reasoning upon the cause of the increased mortality proceeding from certain causes, it must be observed, however, that I have left entirely out of account that resulting from the overcrowding, which we have seen prevails still to a great extent in Paris. It is possible that much of the mortality that is to be observed in that city may be traced to that subtle cause, which I am convinced, for my own part, has much to do with the fact of the inferiority of the rate of mortality of London over Paris. This, however, is certain, that with all the advantages that Paris has unquestionably over her rival, the death-rate of the former is higher than that of the latter; and that so far as the hygienic conditions of the two capitals are concerned, that Londoners enjoy a great advantage over their apparently more favoured neighbours, which is expressed by the fact of the death-rate being about $1\frac{1}{2}$ in 1,000 higher in Paris than in London. Much as has been effected for the sanitary condition of Paris, still more remains to be done, before she can venture to compare with London as to the general conditions of the healthiness of the town.

In arriving at the conclusions that I have done, it must be observed that I have in all cases taken the figures to which I have referred, from the "*Statistique Générale de la France*" and the "*Annuaire du Bureau des Longitudes*," for all that relates to the Paris mortality; and to the returns of the Registrar-General for all that relates to our own. They differ slightly from those of M. Devinck,* as quoted by a writer in the "*Builder*;" but they do not exaggerate—nay, rather the contrary—the advantage of London in this respect. The principal difference is, however, to be found in this, that I have endeavoured to establish my average over a longer period than that gentleman has done. He has attempted to draw his conclusions from only three years' experience; I have thought proper to take ten years for that purpose, which will admit of a fairer average being drawn from the official reports. In fact, the conclusions of M. Legoyt, from the official documents to which he had access, may be taken as a correct statement of the case with respect to the populations of Paris and London. That gentleman stated that—First, Paris had more marriages, and a result, both general and of legitimate children, less than that of London; Second, that in spite of this lesser fecundity, and the well-known fact that a great number of the children born in Paris died in the country, Paris had a rate of mortality that was much greater than that of London; Third, that there was a greater preponderance of male deaths in London than in Paris; Fourth, that the proportion of births to deaths was greater in London than in Paris. It must have cost the national vanity of M. Legoyt a great deal to make these admissions, and they may very fairly be taken as representing the facts of the case.

I am bound, as on the occasion of my last year's report, to express my sincere thanks to his Excellency, Earl Cowley, and to Baron Hausmann, Prefect of the Seine, for the assistance they have afforded me in preparing this paper, and in obtaining for a friend the statistics which have enabled me to compare the mortality of Paris and London. This gentleman visited Paris expressly for the purpose of making these inquiries, and he informs me that it would be impossible to speak too highly of the kindness and consideration he met with from all parties to whom he was introduced, or of their desire to serve him. I would beg, therefore, to record publicly my sense of their politeness, and their willingness to assist in the objects of the comparison.

* M. Devinck is the secretary of the Committee of Finance of the Municipal Council of Paris; and it was in that capacity that he signed the report upon the results of the improvements which appeared in the "*Moniteur*" of January last.

POOR LAW ADMINISTRATION, *its* CHIEF PRINCIPLES *and* *their*
RESULTS *in* ENGLAND *and* IRELAND *as* COMPARED *with* SCOT-
LAND. *By* EDWIN CHADWICK, C.B.

[Read before Section B of the Social Science Congress, at Edinburgh, 1863.]

I HAVE to submit to the consideration of the Section the different leading principles of the legal provisions for the relief of the destitute in England, Ireland, and Scotland, and of the results of their conformity or divergence from what my colleagues of the Poor Law Commission of Inquiry agreed, upon the evidence, were the sound principles of legislation for such provisions.

Principles of a Compulsory Poor Law.

At the time of the appointment of the Poor Law Commission of Inquiry in 1833, there was prevalent the theory of population by Mr. Malthus, sustained by abstract and geometrical reasoning, which attributed the existence and increase of pauperism mainly to the inevitable pressure of population on the means of subsistence, and prescribed, as the necessary remedy, the absolute repeal and disallowance of any legal provision of relief. Eminent economists and statesmen, and, indeed, most persons of intellectual rank in society, adopted this opinion as a settled conclusion, and were of opinion that all measures for the amendment of the Poor Law in England, ought to tend to its discontinuance. The evidence elicited by my own examinations, conducted, as I trust, impartially, as to any preconceived opinions, appeared to me to negative this conclusion. Everywhere the increase of pauperism and of burthens on the rates appeared to be due to the mal-administration of the legal provisions for compulsory relief, to the imbecility, or to the sinister interests of ignorant local administrators, and to habits of the recipients of the rates induced by lax administration—nowhere to the assumed inevitable pressure of a willing working population upon limited means of subsistence. My colleagues, some of them of strong preconceived opinions, yielded to this, and to concurrent testimony of other investigators to the like effect. They agreed, nevertheless, that in all extensive communities, such as ours, circumstances will occur in which an individual, by the failure of his ordinary means of subsistence, will be exposed to the danger of perishing; that to refuse relief, and, at the same time, to punish mendicity, when it cannot be proved that the mendicant could have obtained subsistence by labour, is

repugnant to the common sentiments of mankind ; that it is repugnant to them to punish even depredation apparently committed as the only resource against want. But, whilst we adopted as a settled principle that a legal provision of compulsory relief should be made to the able-bodied, we did not propose that it should be extended to more than the relief of *indigence*—the state of a person unable to labour, or unable to obtain, in return for his labour, the means of subsistence. We did not propose to extend the provision to the relief of *poverty*—that is, the state of one who, in order to obtain a mere subsistence, is forced to have recourse to labour, nor did we propose any legal relief for poverty, strictly so called, and we thought it would be extremely mischievous if we did. We did not consider that a compulsory system of relief by the nation was available as a direct means, as some theoretical writers have assumed, of elevating the condition of the nation. But the evidence collected appeared to establish as a conclusion that a compulsory provision for the relief of the indigent can generally be administered on a sound and well-defined principle; and that under the operation of this principle the assurance that no one need perish from want may be rendered complete, and the mendicant and the vagrant repressed by disarming them of their weapons—the plea of impending starvation. It was assumed, however, that in the administration of a compulsory system of relief, we were warranted in imposing such conditions on the individual relieved as are conducive to the benefit either of the individual himself or of the community at large, at whose expense he is to be relieved. One primary condition is, that his situation on the whole shall not be made really or apparently so eligible as the situation of the independent labourer of the lowest class. Every penny bestowed that tends to render the condition of the pauper more eligible than that of an independent labourer is a bounty on indolence and vice. One further primary condition of a sound system of relief we considered was, that the relief given should be entire—not partial relief. Any partial relief, any relief in aid of wages, had, as respects the able-bodied, an inevitable tendency to substitute parish doles for wages, and to lower wages, and to destroy the independence of the labourer. We held that relief must be so given as to draw a clear and visible line between the paupers and the self-supporting classes. I found that the working classes, in the administration of their own funds, anxiously and laboriously applied this principle in the shape of a rule, that the recipients of relief should be either wholly on or wholly off the box, or the sick list. It is not absolutely necessary that, in the application of this principle, relief should be given, as commonly supposed, in the workhouse. The pauper may be on out-door work, and may receive out-door relief in return for work, provided that his whole time is occupied in working,

in return for this subsistence, under proper superintendence. They may be set on out-door work, as many of the able-bodied in Lancashire now are, strictly in compliance with the statute of Elizabeth, provided it be under proper superintendence and security that their whole time is occupied in working in return for relief.

Principles of In-door Relief.

The workhouse is the most convenient means of providing for fluctuating numbers of applicants, on occasions when they are too few, to make it worth while to provide out-door work or to employ officers to superintend it. The workhouse or poorhouse meets nearly all cases. The poorhouse serves, moreover, as an hospital, as a fever-ward, and an asylum in cases of sickness as well as of ordinary destitution.

Condition of Populations without Compulsory Relief for Destitution.

The state of things which prevails in the entire absence of any legal provision for the relief of the destitute is seen in Italy, in Naples, in Sicily, Spain, and other Roman Catholic countries, in voluntary relief by alms, and a sort of voluntary practice of out-door relief without any return of work. Whatever may be the merit in pious intention of relief by alms collected and distributed by ministers of religion, such an administration is always attended by this defect, that it is without means to ensure the funds from fraudulent misapplication, or secure a return of work from the able-bodied, or to enforce the conditions we specified as necessary thereto; in which our colleagues, the excellent late Archbishop of Canterbury, as well as the late Bishop of London, Blomfield, fully agreed with us. In the instances of the most abundant distribution of doles, the effects are seen in indolence, filth, squalid misery, vice, and discontent. The impression is created in the popular mind of the existence of an indefinite and inexhaustible fund apart from any sources in the labour of others, of wrong if there be any stint to them—of wrong for which, to the more active depredation, brigandage is a natural and proper means of redress, as a war to obtain a rightful share of wealth, and the means of subsistence without giving any work in return for it.

Uses of a Poor Law System as an adjunct to a Police System.

It is a one-sided and narrow view of a legal provision of the nature of the one in question to regard it as a measure simply for the relief of indigence. It has an important aspect, not commonly regarded, as a measure for the prevention of crime, as a measure of police, and of extended penal administration. In this view we contemplated that there should be a comity and concurrent action in England between the indigence relief service with a systematized

police service—when it could be obtained—for the suppression of juvenile mendicancy, delinquency, and vagrancy. In some of the improving provinces of Spain, where monasteries have been suppressed, and where brigandage has also been suppressed, it was found necessary, as I am informed, to precede these measures by provision for the relief of the able-bodied. In the districts infested by brigands, the course adopted was to require from each individual an account of his mode of livelihood, and to offer those who could show none subsistence at the public expense, but with the obligation of making a return of some work or service. Those of the indigent who refused to work or to accept the provision made for them were held to be living dishonestly, and treated accordingly. The indigence relief, as a police measure, has, I am told, proved to be effectual. When the late Count Cavour was Minister of Public Works, I had the honour of a special visit from him, to inquire as to the methods of dealing with the indigent classes in England. I directed his attention to the operations of the police upon the common beggars' lodging-houses in London, which he visited, as well as other institutions and model dwellings, and made himself acquainted with much of our Poor-law institutions. If he had been alive, I should have expected of him that he would have been prepared for the introduction of an extended Poor-law system on sound principles, as one of the measures for the improvement of the condition of the Italian population, that the conflict with the great plague of brigandage, as well as mendicancy, in which the Italian Government is now engaged, and that the measures of simple repression would have been preceded or accompanied by a well-organised system of legal relief, including a provision for the able-bodied, to be used as I am informed such a provision has been used in Spain.

Introduction of a Poor Law System into Ireland.

When our Government was pressed on the subject of a Poor-law for Ireland, I confidently advised the adoption of a provision for the relief of the able-bodied, which, by some statesmen, was deemed to be for Ireland a wild and dangerous provision, but my confidence in it was derived from observation of the working of analogous principles of relief upon able-bodied Irish labourers in England. Besides the deep-seated evil of mendicancy, such a provision might, I considered, be brought to bear on the evils connected with the occupancy of land and upon agrarian disturbances. Economically considered, whatsoever may be the importance of the freedom of change of the ownership of land obtained by means of the great measure—the Incumbered Estates Act—of which the late Sir Robert Peel said it was so good a measure that he really wondered how it had ever passed—of even greater importance is freedom of change of

the occupancy of the land, which should be facilitated and promoted in various ways, one of which is the assurance given to the cottier that he need not cling to the wretched mud hovel, for his children as well as himself, for that neither he nor they are now in any danger of perishing upon abandoning it, even if he fail to obtain a more productive occupancy. Under the Poor-law Amendment Act, extensive sales were made of cottages and plots of land, amounting, I believe, to a million or more in saleable value, which had fallen into the possession of the parishes, on account of the destitution of the cottier owners, but in a large proportion of cases, I believe, on their abandonment of them and the abandonment of the neighbourhoods for a higher return for labour to be obtained as wages elsewhere. The whole proceeding in this class of cases was one of benefit, in the greater return of produce to be obtained by their employment at the market rates of wages, as well as from the gain of produce to the country by superior or less expensive culture. Mr., now Sir George Nicholls, whose opinions were thought to be less extreme or more impartial than mine, was sent over to Ireland to examine and report on the measures of the nature of a legal provision which it was expedient to adopt. Upon a full and impartial examination, he reported decidedly in favour of a legal right being given to the able-bodied, and to a system of relief being instituted, in which entire and not partial relief should be given, and that relief in the workhouse should be the rule. By his exertions mainly, improved poorhouses have been constructed, and Ireland has had the advantage of an advanced system of relief, for which union chargeability in wide areas is substituted for the English law of relief under the law of parochial settlement.

Of Out-door Relief System in Scotland.

In relation to Scotland, we were not consulted, and an opposite system, founded apparently on the population theory, was adopted, under which the adult able-bodied persons, as such, have no right to relief whatsoever, and under which only one-fifth of the parishes are provided with poorhouses of any sort, and in which partial relief, or out-door relief, instead of being the rule, is the exception.

Defects of Poor Law Administration in England.

The opposite systems of relief have been in operation in Ireland and in England sufficiently long to enable a comparison to be made of the results which I now write; but, before I present the statistical results, I wish to submit some prefatory statements, chiefly bearing on the intermediate position occupied by the present Poor-law administration in England. Those only who have had experience of it can be aware how difficult it is, in the present state of political

information, to get any clear general principle appreciated, or to achieve its full practical application. In the present condition and practice of legislation, no measure based on administrative principles, partaking of science or system, goes into the House of Commons that, as a general rule, does not come out worse than it went in. The measure prepared by the Commission of Inquiry got through with less damage than most others of a systematic character, yet still it was largely and seriously altered; but nothing was taken from it that subsequent experience has not shown the necessity of having restored; and nothing was added that has not, in practice, proved to be obstructive. The supposed interests of the owners of close parishes proved to be too great for us, and we failed to obtain the repeal of the law of parochial settlement—that is, we failed to free the circulation of labour, and to improve the quality of the labour, and to improve production and wages to the extent which must have followed upon the measures proposed. We also failed to get the administration freed, as was intended, from action of those sinister interests which operate the most powerfully in narrow areas. Farmer guardians could still give, though indirectly, out-door relief, which in effect was frequently relief in aid of the wages of their own labourers. They as well as manufacturing guardians, as employers, could still apply relief in methods to effect their local stock of labour, and to keep down its price, cheating themselves, however, by impairing its quality and value. The owners of small tenements in towns could still, as guardians, give out-door partial relief, much of which was in payment of the high rents paid by their own tenants. Shopkeepers, as guardians in towns, might still give, as they often determinedly exercised their discretion in giving out-door and partial relief, wholly in money instead of in kind, much of which money was expended in their own shops, or in the shops of their class. Mal-administration of these descriptions was checked, but not extirpated, as it might have been, and, on the whole, scope was given for the operation of an aggregation of interests which made partial and out-door relief the rule, at the expense of the ratepayer, and really of the lower classes, instead of the exception. The administrative areas for much of the business were consolidated from fifteen thousand parishes to some six hundred unions. In rural and thinly populated districts these areas were commonly sufficient; but in urban districts, what may be called natural and proper administrative areas, comprising a whole city or town, or the connected aggregation of houses with their suburbs, were cut up at the expense of efficiency and economy. Thus the city of Manchester is really cut up into four independent districts (suburban) and administrations for relief, each acting without any necessary concert with the others, or any common principle with the others, each being too small to effect, at a moderate expense, those

executive arrangements of paid officers and means of providing and superintending work for meeting promptly, extraordinary as well as ordinary, destitution, which might be gained at a reduced expense, if they were made, as they ought to be, on the scale of the whole city, including its suburbs. I do not mean to say that such extraordinary destitution as has occurred in the cotton districts may be met without extraneous administrative or other aid; but our report under the Commission of Inquiry pointed out town drainage works and other such rude works for the employment of the adult able-bodied, as is now being resorted to with success: and I do mean to say, and experienced paid executive officers would agree with me, that on the due application of the principles therein laid down, such work might have been in full operation more than a year ago throughout all the districts, and that a large amount of demoralisation amongst the labourers might have been saved, and a great deal of severe pressure upon the smaller ratepayers averted, and far less extraneous charitable assistance needed to get over the crisis. I always contemplated that responsibility for the initiation as well as the execution of executive measures should mainly attach to those on whom only it can be charged—namely, the permanent paid officers, locally appointed and supervised; and not on changing, unpaid, and comparatively ill-informed officers, as respects whom any real responsibility for any ill they may do, even in the promotion of their sinister interests, is delusive. The system of entire or in-door relief, as laid down, impedes the action of such sinister interests as have been extensively prevalent during the late crisis in preventing immediate reductions of the masses or congestions of the unemployed, by emigration or by migration, or by changes of employment; it would also have prevented much abusive relief by the payment of rates in aid of labour which has been resorted to by employers who act as guardians, or by guardians who have acted in their supposed, but mistaken, class interests at the expense of other classes of ratepayers, shopkeepers, and others who derive no immediate benefit, if any, from the protected trade. It would take much time to describe the waste, the suffering, the demoralisation, and the permanent burdens which have been imposed on the ratepayers, which the combination of means and consolidated local administrative machinery originally contemplated would have prevented. In many urban districts, as in the metropolis, the profitable labour is given, in some wealthy sub-districts, without any contribution towards the relief of the casualties of destitution contingent on that labour, whilst the entire chargeability for them is thrown upon other and poor sub-districts, or places which the labourers inhabit, and which derive the least benefit from their industry. On the occasion of epidemic visitations, the hospital accommodation in the poorest part of a large town is overcharged,

and the officers overworked, and extra assistance needed, whilst the sick wards of another part of the town will have abundance of room, and a service of officers little occupied. In respect to medical relief, it may be observed that it is contrary to sound principle, and most injurious in its operation, that the public service should be mixed up with private practice, which necessarily withdraws the interest of the officer from his duty towards the destitute. It would be far more economical, instead of two men's half-time, half in public practice and half in private, to have one man's whole time, and that time directed to the work of mitigation as well as of cure.

Classification of Pauper Children and others in separate Establishments originally Proposed.

Our proposal in respect to existing pauperism and establishments was to have classified, by the appropriation of separate houses, each to one class of objects, as would have been extensively practicable in populous urban districts, with the existing tenements, assigning one house to the males, another to the females, one for the sick, and most especially one for orphan and destitute children, instead of putting all classes under one roof. The moral evils which have been inflicted on children—female children more particularly—from bringing them up in the same house with dissolute adults, from the influence of whose example, under the existing conditions of the single union houses, it has been found impracticable to protect them. These evils, so created, are the subject of the regular remonstrances of Miss Twining and the Ladies' Workhouse Visiting Committee, and are maintained in despite of the continued representations of school inspectors, and of the proof of the superior working of the half school time system and industrial training in the separate houses and district schools. It followed, on the principle of classification in separate houses laid down, that lunatics and idiots, the blind, the deaf, and the dumb, who are still scattered about solitarily amidst other classes, to their mutual annoyance and misery, should have been gathered together, and placed in distinct establishments, where they might receive their befitting treatment.

The improvement, which has been effected in Ireland as well as in England, stops short of one great result contemplated and practicable, with the aid of a well-directed compulsory system of relief—namely, the suppression of habitual beggary, and the entire clearance of those seed-plots of juvenile delinquency and adult crime. To effect this, to put a stop to hereditary pauperism, to cut off the vicious succession of those who live habitually as mendicants or depredators, society must be brought to appreciate and to act upon the profound old Hebrew maxim—that he who neglects to teach his son a trade brings him up as a thief.

Concurrent Action of Police originally Intended.

But, to effect this object, the concurrent service of a general and an organised police is needed, and this did not exist in England, nor does it now. On my representation, a commission was appointed to examine into the principles of the organisation of a general police force, and on its preventive as well as repressive action. We found that the estimated number of some hundred thousand persons living by depredation as well as by mendicancy, from whom the population of the prisons as well as of reformatories is kept up, was chiefly migratory, and that migration, from one end of the kingdom to the other, required the corresponding extent of action of a police force. For the protection of London or an inland town, it might be requisite to direct measures to be taken at Liverpool, or Holyhead, or Bristol, or for Edinburgh at Portpatrick, and that, too, with the aid of poor-houses, with their vagrant wards along the whole line. Isolated forces, for the most part, only divert the predatory lines upon each other. But what can be said to the state of intelligence which permits the population of one part of the metropolis itself, the city, to be charged with an extra expense for an inferior protection, and to be subjected to an extra amount of depredation at the expense and inconvenience of the rest of the metropolis, by impeding inter-communication and pursuit of depredators, who prey upon one district whilst they live and take refuge in another. Ireland, however, has an excellently organised general police, which may now be brought to bear, by concurrent action, with that of the Poor-law service, for the attainment of the great object. The provision of a Poor-law for Ireland was opposed by Mr. O'Connell; and, as a compromise, the intended provisions against mendicancy were given up to him: but, in 1847, mendicancy was for the first time made criminal in Ireland, and it is to be hoped that active steps for its repression, with the alternative of the workhouse, will not be longer delayed. Mendicancy has, nevertheless, been largely reduced by the indirect operation of the law. But by a due exercise of the police force, which, in deference to the feelings—the prejudices if I may so call them—not of the working clergy, but of the Roman Catholic clergy, has been kept back, it may at any time be applied to its complete extirpation.

Superior Economy of Paid and Responsible Administration.

With all the shortcomings which I have described as relates to the present English Poor-law, the imperfect organisation and partial consolidation has arrested large growing evils, and has given very general satisfaction to those whose knowledge of what was really practicable is limited. By the new Poor-law organisation of paid permanent officers, paid clerks, paid relieving officers, paid masters

and matrons of workhouses, paid district medical officers, paid schoolmasters, and, it may be added, of paid assistant-commissioners and inspectors, with the paid officers of a Central Board, together with a large expenditure upon new buildings throughout the country, all of which were the outcries as extravagancies; a large saving has, nevertheless, been effected upon the unpaid services, chiefly of one parish officer throughout the country—the unpaid parish overseer. I cite the statistics of Mr. Purdy, who shows that, in the 22 years preceding the reform of the Poor-law in England, 143 millions was the sum spent for relief, but in the 22 subsequent years it was only 129 millions, notwithstanding that the population averaged nearly 25 per cent. more in the latter than in the former period. This is equal to a total decrease of 33 millions, or yearly more than 21 per cent. on the service of parish officers, but the reduction is really much greater, as formerly there was very large expenditure in labour rates and otherwise, which did not enter into the parochial accounts. By a higher administrative organisation, and executive expenditure and complete action, on the principles originally purposed, the saving might be nearly doubled, apart from the difference of results. I have lately shown, for example, in respect to education that by a higher organisation for education, with a head master at double the ordinary salary, aided by a second and a third assistant master, with a staff of paid pupil teachers, with a drill master for physical training, as originally contemplated and realized on the half-time and industrial training in the district pauper schools, the cost is reduced to one pound per head per annum, and the work done in a superior manner, in half the time of the single competent master, at a charge of two pounds per head, and with vast differences in the comparative industrial aptitudes imparted, and in the moral and economic results achieved. The public economy would be considerably augmented in the directions I have indicated by the concurrent action of a general police. It has been proved, as respects the partial organisations of isolated county forces which followed our recommendations of a general force in England, that the services of paid privates, paid sergeants, paid superintendents, and paid county high-constables, under disadvantageous conditions for economy of the exclusion of the burghs, were brought immediately within the total expenses attendant on the services of the one officer—the unpaid parish-constable. In fact, we were prepared to ensure the services of an organised general police force of some twenty-two thousand men, for the whole of Great Britain, it might be said for nothing, or within the whole of the direct and collateral existing expenses attendant on the services of the parish constables, paid beadles, and isolated borough constables.

Greater Expense of the Scotch System of Out-door Relief, without Poorhouses,

The new Poor-law organisation in Ireland, I have no doubt, is, in fact, a large economy upon no previous organisation of the kind whatsoever. In respect to the provision for Scotland, I am apprehensive that, from the error of its principle, the change has been one of increased and seriously increasing charge. As showing the result of two different principles of administration, the experience of Ireland and Scotland present the best means of comparison, as having had no large growth of hereditary pauperism, as distinct from common mendicancy, generated under the long mal-administration of legal provisions for relief as in England. Scotland, then, with its three millions of population, had, in 1860, 120,000 paupers, or 4 per cent. on the population, an amount nearly equal to the accumulated pauperism of England, which was 4·7 per cent. Ireland, with upwards of six millions of population, had 95,000 paupers, or only 1·5 per cent. on the population. In Ireland the cost of the relief given was 2s. 2½d. per head on the population. In Scotland it was 4s. 2d., or approaching that of England, which was 5s. 7½d. per head on the population. The average cost of relief per case relieved was greater in Ireland, the relief being there more full, it being 9l. 18s. 6d. per case, whilst even in England it was less than 7l., and in Scotland it was only 5l. England, which ranks highest in wealth, is the deepest in pauperism; under the system of partial relief, six-sevenths of the relief is out-door relief; Ireland which is the lowest in wealth, and which gives entire relief, or relief in the workhouse, in twenty-nine cases out of thirty, is the least burdened with paupers; whilst Scotland, which stands between England and Ireland in respect to wealth, where nineteen-twentieths of the cases are relieved out of doors, is approaching to England in respect to pauperism. The influence of the erroneous system on the population appears to be such as we should have anticipated. Mr. Briscoe, General Superintendent under the Board of Supervision for Scotland, having given evidence of the demoralising effect of out-door relief in the population of the Highlands, was asked, as a concluding question, “Then the effect of
“ this out-door relief has been very demoralising, and has broken down
“ the spirit of independence?” and he answers, “Not the least doubt
“ about it; it has deteriorated to a considerable extent, truth, industry,
“ morality, self-respect, self-reliance, the natural affections and inde-
“ pendence of character; it appears as if the whole of the humbler
“ classes had completely changed character; there is no shame what-
“ ever in demanding relief even among some of higher station. The
“ state of things in the Highlands of Scotland is perfectly deplorable,
“ and every person admits it.”

Advantages of In-door Relief as Displayed in Ireland.

Persons whose knowledge of the real condition of the classes who come within the range of a compulsory provision is not much better than that obtainable from seeing opera shepherds and shepherdesses, or the sketches of artists, treat out-door relief as a measure of severity; but those who have examined the foetid one-roomed tenement in which the members of a whole family, often more, are heaped together—in which children are born, and the sick are kept amidst the healthy—in which all die, and where the dead are retained amidst the living until the means of interment are found, know that every case of removal is an act of humanity, and sanitary relief to those who remain, as well as to those who are taken away. To the Irish cottier who may be persuaded to give up the wretched mud hovel, in which the pig has had its sty and its measles, with his children, in-door relief gives him a clean, well-ventilated lodging, a clean bed, and a dietary and condition of existence such as he never before had in his life, and gives him this freely for a moderate return of labour, until he can emigrate, or get labour in the open labour market. The existence of such a refuge relieves him from despair, and gives him courage to adventure far afield for the improved means of independent self-support. That it is resorted to as a refuge is shown by the fact that in-door relief is attended by a greater degree of fluctuation and change in ordinary times than out-door relief. Once on the out-door pauper roll no one voluntarily resigns his position, and consequently the permanent pension-list, by far the heaviest incumbrance on the English and Scotch poor-rates, undergoes comparatively little change in the course of the year. In Ireland, on the contrary, as the Commissioners state, the changes are continual, through discharges occurring voluntarily on the part of the paupers, and through admissions freely granted to the applicant for relief. Thus, the average duration of the cases little exceeds three months. The general workhouse provision enabled Ireland to weather through the horrors of the famine, which would without them have been enormously aggravated; and there can be no doubt that it has been one great aid to the improvement of the population now going on in Ireland.

Preventives of Pauperism, Sanitary and Educational, not intended.

After all, however, and at the best, the service for relief, like the police service of repression, is a melancholy service. It is a dreary prospect, if we view it as an inevitably perpetual condition. I have always, as my opportunities permitted, looked forward to the development and promotion of the means of prevention. The common cause of legislation at present for the relief of the destitute is like foundling hospitals, and making provision for the treatment of marsh diseases

—most necessary and humane so long as, from ignorance of sanitary science, the diseases were inevitable; but this is like going on without any conception or capacity to receive, or to act upon ideas, that the marshes admit of being drained, and being made, in place of fever nests, fields of healthful and inferior production. Of the existing causes of destitution and pauperism to which the class of independent labourers are subject, a larger proportion are those which do arise from localising causes, bad sanitary conditions, ill-drained, and cesspool-tainted, and over-crowded habitations; over-crowded, ill-ventilated schools, and unduly prolonged hours of sedentary constraint, without due physical exercise for the young; over-crowded and ill-ventilated places of work, and over-long hours in them for the adults; with the results—excessive sickness and mortality, and premature disability for work, premature chargeability on some fund, public or private, which fund the shortness of the workman's career commonly prevents him from providing for himself. These causes of disability and pauperism are everywhere gross and patent. It may be said, in the words of the Psalmist, that the earth is "filled with the habitations of cruelty." By partial sanitary appliances, these causes of misery and destitution have, in various instances, been reduced one third, and, it is proved, may be reduced one-half; and that the period of self-support and working ability of the labourer or the artisan may be extended, as I have estimated, ten years or more, so as to enable him to make those reserves, to ensure the ease and independence and respectable self-support which is the last mundane consolation of old age. The landowners in Scotland, who are apprehensive of the increasing pressure of pauperism, and especially the owners of the single-roomed tenements, in which a million of the population of Scotland reside, will best ward off future burthens by exertions in this direction; and next to it, in this other, in arresting juvenile mendicity and vagrancy, and in cutting off the vicious succession to pauperism and vice, by imparting to the young industrial aptitudes, by means of early physical, as well as intellectual, moral and religious training. The efficiency of this great means of prevention has been demonstrated. I may assume that I have elsewhere proved that on the half school-time system, the common elementary instruction may be imparted in half the hours of the day now occupied, in half the period of years now occupied to the detriment of productive occupation, and at half the expense that is now incurred for inferior mental instruction, divested of the physical training, which is so necessary to impart industrial aptitudes. If these great means of prevention, educational, and sanitary be duly prosecuted, pauperism must eventually be of comparatively unfrequent occurrence, and a charge of little public account.

The STATISTICS of CRIME in AUSTRALIA. By WILLIAM WESTGARTH, ESQ., Author of "Victoria and the Australian Gold Mines, 1857;" "Colony of Victoria, 1864," &c., &c., &c.

[Read before the British Association, at Bath, September, 1864.]

CONTENTS:

	PAGE		PAGE
I.—Australia and Australasia	505	VIII.—Improving Condition	510
II.—Local Circumstances affecting Ratio of Crime	506	1. Retrospect of New South Wales	510
III.—Crime in Australia as compared with England	506	2. Retrospect of Van Dieman's Land	511
IV.—Crime and Climate	507	3. Retrospect of Victoria, South Australia, and Queensland	512
V.—Crime in Australia Greater than in England	507	IX.—Case of West Australia	512
VI.—Large Ratio in Victoria; the Cause	508		
VII.—Great Crime Ratio the effect chiefly of Transportation .	509		

APPENDIX.

A.—Opposition to Transportation, and Defensive Legislation of Colonies	517
B.—Inequality of the Sexes in the Australian Colonies	518
C.—England and Wales, Crime Proportioned to Destitution	519

I.—Australia and Australasia.

THE term Australia, used strictly, would limit my subject to the five colonies of our antipodal group that are situated upon the great southern mainland—New South Wales, Victoria, South Australia, Queensland, West Australia. But I shall find occasion, in the course of my remarks, to embrace also the two outside colonies of Tasmania and New Zealand, which belong to the wider circuit distinguished by the name of Australasia. These seven colonies comprise amongst them an area of very nearly three millions of square miles, of which more than two-thirds are still unoccupied. The occupants of the remaining area consist, at the present day, of about 1,300,000 colonists of English blood, in the wider national meaning of the word, besides a small proportion of European foreigners, chiefly Germans; about 40,000 Chinese, who are mostly upon the goldfields in Victoria and New South Wales; and the aboriginal natives. The latter affect, only in a slight way, the criminal statistics of the colonies, as, with one notable exception, that of the New Zealand natives, they are nowhere important in any sense. In the northern island of that colony, however, to which the

unfortunate native war is limited, the natives are still in numbers about equal to the colonists, and they have been very impressively teaching the latter for several years past to respect some at least of the qualities of savage life.

II.—*Local Circumstances affecting Ratio of Crime.*

In a view of the state of crime in Australia, the most important circumstance is the system of the transportation of criminals from this country—a system familiar to us by seventy-five years of uninterrupted duration, and that still survives, although in a diminished degree, in the colony of West Australia.

A variety of other circumstances, although in their effects of minor consequence to that just alluded to, tend to produce diversities in the ratio of crime in these different colonies. In South Australia, for instance, there is, comparatively with the other colonies, a settled population, extensively grouped into the family relationship, with the sexes nearly equalised—census 8th April, 1861, 126,830, viz., males, 65,048, females, 61,782—and where agricultural operations on a large scale have reproduced much of our English country life. New South Wales and Victoria, on the other hand, have been checked in their ameliorative progress by the gold discoveries, and the rude experiences of gold mining life for the last thirteen years.—In Victoria about 90,000, or one-sixth of the whole population, are “actual miners.”—Queensland and New Zealand are still in a socially unsettled state from an almost daily immigration of large numbers of new colonists, and the disproportion of females usual in the first peopling of remote colonies.* New Zealand is being further affected prejudicially, in a social sense, by the extensive gold mining in the southern districts during the last three years.

III.—*Crime in Australia as compared with England.*

We are curious to inquire, with regard to these colonies, what is the ratio of crime as compared with this country. We see that they are peopled mainly by the same race, but under happier circumstances as to the means of subsistence and general well being. Remembering how intimately crime is proportioned to destitution in this country,† we naturally anticipate that in the colonies, with diminished destitution, there will be diminished crime. If we do not find this to be the case—for on the contrary the average of crime is much greater—we must bear in mind that the effects of the transportation system have confused all the proper elements of our case. The inquiry can be fairly conducted only at some future day, when these effects have passed away. Meanwhile, however, we may reason—

* See Appendix B.

† See Appendix C for illustration of this point.

ably infer, from the favourable condition presented to us even now by some of the colonies that have happened to be the least exposed to the convict stream—South Australia, New Zealand, and particularly Queensland—that the entire group would, but for this cause, have compared to decided advantage with the mother country.

IV.—*Crime and Climate.*

Another point challenges our curiosity. These colonies pervade a wide diversity of climate, from the winter snows of southern New Zealand, and from the genial Tasmania onwards continuously to tropical Queensland. Does the difference of climate seem to make any difference in the ratio of crime amongst the same people? We know that our physical system is affected, and mostly for the worse, as we go towards the equator. Is it so with the moral system? and do our tropical colonies of the British people indicate more crime than those of temperate climes? This question cannot be answered any more than the previous one, and for the same reason. The data are all at cross purposes on the subject, for the chief determining cause as yet has been the incidence of the convict system. The colonies that indicate at present the highest crime ratio are, besides West Australia, which is still a convict colony, Tasmania and New South Wales, originally penal settlements, although now no longer such, and Victoria which is situated between them. Tasmania enjoys a mean yearly temperature of 53° or about 4° more than London; Victoria of 58° ; and New South Wales of 66° . South Australia, on the other hand, under a mean of 64° , is considerably better than any of the preceding. But the smallest ratio of crime is due to Queensland, whose ample area lies upon either side of the tropical line.

V.—*Crime in Australia Greater than in England.*

Australia, then, does not present us with the pleasant spectacle of an unusually small ratio of crime. On the contrary, in the chief colonies it is much, nay even enormously, greater than in this country. In the case of Victoria, as stated in a protest addressed last year to the home public by the Anti-transportation League of the colony, the cost of police and prisons for the year 1860 amounted to no less than 15s. per head of the whole population. We shall better apprehend the meaning of this statement when I add that the cost of police and prisons in England and Wales for the year 1863, according to the parliamentary papers on the subject lately published, is only 2s. $1\frac{1}{2}d.$ per head,—police 1,658,265*l.*, prisons 547,415*l.*; population about 20,440,000. No doubt these costs must be greater, in similar circumstances, to the thin population of a colony, than to the dense masses of a longer-settled country, and the cost of police service is greater in the colonies; but the difference in question far

exceeds any reasonable allowance to these causes, and thus supports the argument of the colonists, that the transportation system is to them a very costly heritage, to say nothing of its other evils.

But as to these other evils, of course this greater ratio of expense for the detection and repression of crime, means a greater ratio of crime itself. Thus the commitments, for felonies and misdemeanors, to the supreme court and sessions in England and Wales, taking the five years 1851-55, averaged yearly 1 in 668 of population, while in New South Wales the yearly average of the five years 1858-62, gives 1 in 433; and in Victoria (1859-61), the still worse result of 1 in 375.* Indeed, with respect to England and Wales, taking a subsequent period, namely, the six years 1856-61, the yearly average is so comparatively small as 1 in 1,093; but the comparison is to some extent unreliable, through the operation of the Criminal Justice Act of 1855, which extended to magistrates the power, with consent of the prisoner, of dealing summarily with certain cases of offence, instead of sending them to juries.

VI.—*Large Ratio in Victoria; the Cause.*

Let us here observe, that Victoria appears in this comparison more unfavourably as to crime than even New South Wales, notwithstanding that the latter was originally a convict settlement, and for a long time the head quarters of the system in the southern hemisphere, and that Victoria was free from the outset. The seeming anomaly requires explanation. Victoria is situated, as before stated, just between the two great seats of the convict system of past days—New South Wales and Van Dieman's Land—and was thus always exposed, upon either frontier, to the influx of the convict population, whether "runaways" or "expirees," as the bond and the freed of this unwelcome class of immigrants were respectively termed. Under these circumstances, a terrible experience awaited Victoria upon the discovery of the goldfields. The convict class streamed over in thousands from Van Dieman's Land, as from an open gaol; and crimes of the most shocking and alarming atrocity became of almost daily occurrence. During the year 1853, when this state of things was at its height, there were no less than 554 persons of this class convicted for fresh offences in the colony; the whole population at the time averaging about 200,000. We have thus 1 in every 361 of population, or nearly three times the proportion of the convictions in England and Wales; and we must further bear in mind, that, in addition to all this extraneously derived crime, as we may in some sense call it, the colony had still the crime proper to its own society to endure and dispose of.

* Mr. Rolleston, Registrar-General, New South Wales, for year 1862. The superior condition of South Australia is exemplified (year 1862) by 1 in 628.

Victoria, however, has improved since that date. Van Dieman's Land, called Tasmania since the cessation of transportation, presents us with the heavier category of crime. The convictions for felonies and misdemeanors, are 1 in 486 of the population. We graduate in the equatorial direction through the somewhat happier ratios of Victoria and New South Wales, and only reach the smallest proportions of crime, as already stated, in semi-tropic and tropical Queensland. There the proportion does not exceed, or is even more favourable than that of England. Queensland lies out of the way of the main convict stream. The "old hands," as the earlier assigned convicts were called, and who, in the penal days of New South Wales, were often the only servants procurable for the remote pastoral stations of the northern district that is now Queensland, have mostly long since died out; and the young colony, for its erection into a separate Government dates only from the year 1859, furnishes, approximately at least, an idea of the picture our southern colonies might have presented but for the convict system. New Zealand also has been in great measure exempted from the convict influence. The committals to the supreme court and sessions, and the convictions, are respectively in about the same proportion as those of England and Wales. This condition, however, refers to times preceding the mining of the great goldfields of Otago, which began in 1861. Already, indeed, there are symptoms of declension, for the year 1862 has shown a considerable increase in the proportion of convictions. There are 145 in that year, namely, 10 felonies and 135 misdemeanors, or about 1 in 690. There are above 20,000 miners now at work upon these fields; and if some of Victoria's gold mining experiences are to be reproduced in New Zealand, an unbroken continuance of the happy immunity of the latter colony from any marked excess of crime is hardly to be looked for of the future. But the future will also have its improvement, as Victoria herself exemplifies, whose chief goldfields are even now the seats of considerable municipal towns, communicating with each other by roads or railways and telegraphs, and drawing with facility from their seaports, in exchange for the all-negotiable gold, the choice of the world's market for their social amenity and progress.

VII.—*Great Crime Ratio the Effect chiefly of Transportation.*

I have thus shown that these colonies present considerable diversities in regard to crime; but that these diversities are quite intelligibly accounted for by a variety of local circumstances, chiefly according as they have been severally exposed to the effects of the convict system. On the average they present a ratio of crime very considerably higher than that of this country.

VIII.—*Improving Condition.*

But if this unfavourable view must still be taken, the condition is at all events an improving one, and by no slight gradations. Indeed there is no feature of these colonies more satisfactory than their progressive social improvement, as illustrated by the almost methodical yearly diminution of crime. I am to be understood as speaking of the whole group collectively, for, besides exceptional circumstances pointing in an opposite way, in some of the members, the case of West Australia is already presenting some of the worst features of the earlier convict settlements to the eastward, although happily on a scale less noticeable to the world and less hurtful to its neighbours.

I shall now examine some salient points of this comparative well-doing. If these colonies cannot yet take a high rank in the social scale in respect to their crime ratio, let us console ourselves in regarding the much lower position from which they have risen, and thus take reasonable assurance that the future will exceed the present, somewhat as the present has exceeded the past. The old convict leaven gradually dies out, and its diminishing influence is more and more overwhelmed by the tide of healthy immigration of the free colonists. One chief guide in our comparisons will be the proportion of convictions for the graver offences—the felonies and misdemeanors—at the supreme court and sessions.

1. *Retrospect of New South Wales.*

New South Wales ceased to be a convict colony in the year 1840. After that year transportation was concentrated upon Van Dieman's Land; but the former colony was left to digest, as it best could, the accumulations of more than half a century of convict immigration. The process was by no means easy, even in the superficial view of its mere pecuniary cost. The Imperial Government affected to bear its share of the burden bequeathed to the free colonists by continuing to defray the expense of convict establishments in the colony. But so inadequately did this arrangement meet the merits of the case, that one of the earliest acts of the first representative legislature, instituted at Sydney in the year 1843, was to draw up a bill of costs on the subject against the Home Treasury—a bill of such proportions that, as “no part thereof has as yet been paid or compensated,” we must suppose it was too formidable to be encountered. But as to all this accumulated convict population, when and how would it be finally disposed of, for it was being continually immersed in fresh crimes? There were consignments to chain gangs, imprisonments by the thousand, lashes by the hundred to each back, executions by the half dozen of a morning. The colony has bled,

both literally and metaphorically, in the protracted warfare. But it has fought and conquered, and, after a quarter of a century, it emerges in comparative peace and security.

I say "comparative," for we must not suppose that the old condition is yet ended. The very last mail from Australia arrived but a few days ago, brings accounts of bushranging and highway exploits such as would, in point of coolness, audacity, and ferocity, rival those of Turpin or Wild, or the worst of Italian banditti. The perpetrators are mostly old British convicts or their descendants. Victoria, and especially New South Wales, have been of late a prey to such atrocities, which indicate that the convict leaven is still present, and is powerful to reappear at intervals in irrepressible outbreaks of this kind, which for a season defy alike the police and the Government.

Experience of this nature enables a colony to speak authoritatively on the merits of the transportation system, and to urge energetically the natural equity that prescribes to every society the duty to retain and control its own criminals. But, returning to the colony's statistics, we shall look at those of 1840. The convictions are 1 in 155 of the population;* the present proportion in England and Wales being 1 in 997.† The previous year is still worse, for it gives 1 in only 126, or worse by nearly eight times than the ratio of this country.‡ And yet even these deplorable results do not adequately represent the full measure of colonial crime, as the summary jurisdiction of the magistrates was specially enlarged so as to embrace many of the graver offences. This was the case also in Van Dieman's Land, as it is now the practice in West Australia, and it is perhaps a custom of indispensable convenience in dealing with unusual proportions of crime. From this gloomy picture of the past, we turn with pleasure to the present, to learn that the convictions of New South Wales are now in the relatively promising proportion of 1 in 715 of population.§

2. *Retrospect of Van Dieman's Land.*

Van Dieman's Land remained, for fourteen years after her sister, the great convict receptacle, and with few results to her social advantage, as may well be supposed. Let us, for example, take the condition arrived at in 1846. Disclosures of a truly awful character were at that time being transmitted from the colony to the Home Government and public as the result of convict settlements. In a total population of 60,000 of all ages in that year, there were 29,870

* 1840, convictions 832; population 129,463.

† Average for 1862-63, 20,409; population about 20,350,000.

‡ 1839, convictions 912; population 114,386.

§ 1862, convictions 514; population 367,495.

convicts, while many of the remainder were free only by pardon or servitude. In the same year no less than 17,338 cases of offence of some kind or other were proceeded with before the magistrates. After such a description, it is pleasant to be able to record that the colony has notably improved since that date. With the cessation of transportation, the old name of Van Dieman's Land has been buried, with all its convict associations; and fair Tasmania, beauteous in scenery and genial in climate almost beyond compeer, has with her new name sprung into a new existence.

3. *Retrospect of Victoria, South Australia, and Queensland.*

But I must hasten over this part of my subject. Victoria, which we found so oppressed a few years ago as to show for the one year, 1853, reconvictions of old British offenders to the number of 554 in a relatively small population of 200,000, is so much improved a few years after, as to exhibit only 24 such convictions for the year 1862, the population meanwhile having nearly trebled. The proportion of other convictions has also materially diminished. South Australia, by the same test of convictions, shows a decided diminution in the ratio of crime during the ten years 1853-62. During part of that interval, the colony remained stationary, or even retrogressive, in its crime-ratio, a circumstance attributable to the convict immigration from West Australia. But that source of crime being greatly restricted by the colony's measures of defensive legislation in 1857,* improvement is soon afterwards manifest, and the proportion in 1861-62, is nearly 50 per cent. less than it was about eight years previously. Queensland appears to have effected the same encouraging degree of progress during the shorter space of four years, 1859-62. In this last colony, however, where the increase of the population is so rapid, that about one-half consists of the new immigrants of the preceding two or three years, we can hardly as yet look for reliable data on this question.

IX.—*Case of West Australia.*

I now turn to a different picture—the colony of West Australia. The actual present condition of that colony, and the degree of social injury she inflicts on her eastern sisters by the continuance of the convict system, have been questions of differing and somewhat angry statement. The colony was not of convict foundation, like New South Wales and Van Dieman's Land; but it had comparatively few natural resources, and thus, poor and slow of growth, it accepted the convicts and the imperial expenditure that was to accompany them, on the business principle that all custom that pays should be made

* See Appendix A.

welcome. It is only fair towards West Australia to recall that similar views pervaded New South Wales and Tasmania in their earlier years, at a time when colonial interests were represented mainly by a handful of employers, who regarded the colonies as a field for gain rather than a home. West Australia has not yet emerged from a parallel condition. In the eastern colonies, so soon as a society was consolidated by free immigration, and a public opinion brought into action, the system was condemned. Australia had then become "home" to its increasing settlers, and even the children of the convicts were, in many instances, leagued with the other colonists against transportation.

What West Australia now actually is, and what it is likely to be at a further period, should the convict system be persisted in, is a subject of general interest—an interest not confined to Australia. The latest and most complete, and apparently the most authentic account of the colony, is from the correspondent of one of the Victoria newspapers, the Melbourne "*Argus*." The writer was sent specially from Victoria on this errand of inquiry, at a time when the colony was in strong agitation upon the convict question, and when its press and public condemned the system alike in Eastern and Western Australia. But while it is only proper to allude thus to a possible cause of bias on this account, the correspondent's communications, which were received and published at Melbourne so recently as June last, bear all the marks of fair and temperate representation, authenticated by ample official and other statistical data.

The result presents to us a darker picture than had been usually imagined of a settlement so remote and so little before our public, even by those opposed to the system. Indeed it might be well for the future interests of the south, if the French Government could be induced to give attention to the report in question, and thus learn some of the inevitable results of convict colonies, before proceeding further with their project of New Caledonia. Many doors are kept unlocked, but it is the security of a poor colony that presents little to tempt the thief, and no opportunity to dispose of any plunder. The official regulations are favourably alluded to. There is a strict surveillance and firm grasp of the convicts while undergoing sentence; but all this is at an end after they are freed by conditional pardon or servitude. They then instinctively turn their eyes to more prosperous and attractive spheres, and shoal off by hundreds annually to the eastern settlements.

Of this fact there was no room for doubt, and hence the fresh outbreak of crime and obstructed path of social progress in these settlements. Take, for instance, the state of the question at the date of 1st January, 1860; by that time 2,583 convicts had become free by pardon or servitude, and of these there were 1,410, or more than

half, unaccounted for. In other words the latter had, almost without exception, left for “t’ other side,” as the common phrase is, and the local authorities had willingly let them go. It was estimated that for every five convicts who were arriving from Britain, three were re-emigrating for the eastern settlements. Indeed the colony possessed no resources to give these persons employment; and so evidently did this appear, that, as stated by the writer I have quoted, if the other colonies could but arrest this constantly relieving efflux of the convicts, the results to West Australia would become so insufferable as to cause a speedy end of the system.

The system began in the year 1850; and up to the 31st May of the present year, there had arrived in the colony 7,781 convicts. The imperial local expenditure on their account is at present about 98,000*l.* yearly; but besides this benefit, the colony had stipulated for an immigration of free colonists, at imperial cost, in numbers equal to the convicts. This last arrangement, which has been carried out, and has doubtless mitigated the evils of the system to the colony, permitted of prisoners’ families being sent out to them, besides pensioners and other persons. A number of free females were also included, to assist in equalizing the sexes in the absence of female convicts, none of whom, happily for the colony, were ever transported there.

The colony, if it did not thrive socially and morally, took at once a new life of another kind. Up to 1850, after twenty-one years’ existence, there were but 5,886 colonists over its wide expanse, with the most insignificant finances and commerce, the public revenue having been but 12,440*l.*, the imports 62,351*l.*, and the exports 22,135*l.* But in 1863 the population had increased to 18,700, while the revenue was between four and five times larger, the imports nearly doubled, and the exports quintupled. Many colonists, especially traders in the towns, had realized small fortunes, such as they could not have even dreamed of amid the virtuous poverty of the earlier times.

But returning to the other side of the picture, we shall find it very dispassionately set forth by the authority I quote from. One of the greatest evils of such a colony early appeared, namely, that the criminal class exceeded in numbers the class of the free. Five years ago, in 1859, the whole adult males of the colony were computed thus:—

21 years and upwards	{ criminal	3,842
	{ free	2,708
Excess of criminals		<u>1,134</u>

and this excess must since have been greatly increased, as the free labouring class, as well as other free colonists, have been gradually

leaving the colony, elbowed out, as it were, by the competition of the freed criminal class. The hand of fellowship is not extended to the latter by the former, and we cannot wonder at such reticence; for although, as my authority remarks, "many of the ex-convicts have acquired homes and property, the condition of the mass is most unsatisfactory. They remain wanderers on the face of the land; religion unknown to them, drunkenness an universal vice."

In a society so constituted, there is of course an incessant recommitting of offences. If unlocked doors will argue for a limitation of crime in some particular direction, there must yet, by the results before us, be a full compensation in many other ways. But in the first place, to show how this crime is restricted almost solely to the convict class, I may mention that out of 287 persons in actual confinement for fresh offences, as reckoned on one particular day, only 6 belonged to the non-convict class. With respect to at least the graver class of offences, a great misconception is apt to prevail outside the colony, from attention being directed merely to the records of the supreme court. Some 25 convictions yearly for the West Australian population shows proportionately no heavier criminal list than some of the eastern colonies. I have already alluded to the true explanation, which consists in the specially extended powers of the magistrates. In West Australia the summary jurisdiction of the bench seems to exclude only a sentence of death; as, for example, such sentences as seven years and 100 lashes are of common occurrence.

We shall appreciate more exactly the actual social condition of the colony in its criminal relations, by the grave fact that during the year 1863 the number of convictions, for all kinds of offences, was no less than 3,277 in a population—both sexes, and all ages included—of 18,700. This is a proportion of 1 offender to less than 6 of population. For purposes of comparison, we may, from this datum, assume about 1 in 4 for cases dealt with, as distinguished from convictions. In Victoria the proportion was lately 1 in 18; in New South Wales 1 in 19; in South Australia 1 in 36; and in England and Wales 1 in 45. We have already ascertained that the proportion in Van Dieman's Land, in its worst days, was 1 to rather less than 4. West Australia happily does not stand out the huge blot that was presented to the world by the larger scale of the senior settlement; and yet, judged by the proportions of this criminal test, the former is even now close upon the heels of her eastern prototype.

But to return for a moment to these 3,277 convictions in one year in West Australia, and their proportion of 1 to less than 6 of population. Many of these, no doubt, are cases of repeated offence on the part of the same individuals during the twelve months. But after making due allowance on this behalf, and on the other hand

deducting the young of those ages during which offence is rare, and the females, with all of whom we may hope, from the circumstance of their non-convict character, that it is equally rare, we are shut up to a most extraordinary conclusion—no other, in fact, than this, that well nigh every second man of the community is a yearly offender against society. Either of these parties—the offender and the offended—we may be sure, is an offence to the other; but which is society? Rarely indeed have the opposing kingdoms of the good Ormuzd and the evil Ahriman been so nicely balanced.

In conclusion, although the present condition of Australia as to crime is somewhat discouraging, yet it is a condition that is manifestly improving—a condition that in the present greatly transcends what it was in the past. We can understand from the foregoing, how much this condition depends, for good or for evil, for advance or retrogression, upon the abolition or continuance of the transportation system; and we can thus view in its proper light the strenuous opposition that is now being made by the colonists to even the lingering remnant of the system in West Australia. They mark with satisfaction the gradual wane of the old state of things, with the dangers and disgrace that have so long beset them; and we may readily suppose that when the dawn of a better order is fairly brightening upon them, the effect of any interruption, such as this persistent continuance of transportation to West Australia, must be intolerably vexatious.

There is indeed an argument against the colonists, as well as for them, in this question. England planted her convict colonies upon the desolate shores of Australia; and the free colonists who followed the movement, and who have since prospered and multiplied in the new scene, have now risen up against the convict system. But this argument, to the credit of the Imperial Government, is not used against the colonists. The question is argued on its substantial merits, and in this way those who are on the spot, and can see the practical effects, have totally condemned the system. The records of New South Wales, Van Dieman's Land, and Norfolk Island, stand out as an indelible stain on the fair face of the empire. But these records, and all pertaining to them, are at least receding into distance; they are on the eve of being memories instead of realities; and in another generation Australia may begin to rival the world in her relative freedom from crime, as she has already done in her marvellous commercial progress and general prosperity.

APPENDIX A.

Opposition to Transportation, and Defensive Legislation of the Colonies.

There was no combined movement in the colonies against the convict system until the year 1850, when the Australasian Anti-transportation League was commenced. It originated in Tasmania, and was inaugurated at Melbourne in the year following. This body was dissolved two years afterwards, under prospects that promised the full accomplishment of the object it had in view. In February, 1853, the then Secretary for the Colonies, the Duke of Newcastle, had intimated to Parliament that it was the intention of the Government to abandon the transportation system, which was to be given up at once as regarded Van Dieman's Land, and a few years later as regarded West Australia. But as these expectations have remained unfulfilled, the League has been reconstituted in Victoria; the colonists having been stimulated to this course by the Report of the late Royal Commission, which recommended, instead of the expected cessation, a greatly increased number of convicts being sent to West Australia. The League had met with general support in the colony, and has announced that it will fight out this battle with the mother country by the aid of all the weapons that English law and liberty allow it, and that the interests of the colonial societies demand.

Case of Victoria.

Already the colonies have exemplified this phraseology by their defensive legislation. Under the auspices of the earlier League, Victoria passed the Convicts' Prevention Act of 1852, an extreme measure, extemporised for the emergencies of the time with reference to the convict influx from Van Dieman's Land, that followed on the discovery of the goldfields. The Act was mainly designed to checkmate the "conditional pardon" system, by means of which the adjacent penal colony sought to relieve itself. Under that form of pardon, the convicts received permission to leave Van Dieman's Land, but not to return to England, and of course they went straight to Victoria. By the terms of the Act, the vessel bringing these persons was liable to heavy fine, and the persons themselves could be seized on board, and either imprisoned for three years or returned to the colony whence they came, notwithstanding the so-called Queen's pardon and the royal prerogative. The colony took the equitable ground that persons unfit to enter England had no right to enter Victoria.

This cauterising measure was afterwards extended so as to exclude from Victoria the convict class for three years after they had received even full and free pardons. Indeed, a recent inquiry in the colony into the present state of the law on the subject, seems to indicate that any two magistrates, on proof shown as to a felony committed elsewhere, may send the convict back to the place where his crime was committed. This law, indeed, had lately a near chance of being brought into actual exercise, as a proposition had been brought forward in the Victoria Legislature, and not without influential support, to retransport to England a number of West Australian convicts. It had been ascertained that the police of Victoria and of the adjacent colonies had their eyes upon a very considerable list; and the temptation was strong upon the colonists to refute, by so practical a demonstration, the oft-repeated assertion that West Australia and her convicts were too isolated and remote to endanger the eastern colonies.

Case of South Australia.

The preventive and extraditionary act which Victoria passed in order to secure herself against Van Dieman's Land, was passed five years afterwards, namely, in 1857, by South Australia, to protect that colony against the convict influx from West Australia. The latter colony had caused little alarm to its neighbours until towards the year 1855, by which time the convicts in considerable numbers were acquiring their freedom. In that year there were 269 arrivals of all kinds from

West Australia at Port Adelaide. In the following year the numbers rose to 438, and in 1857 to 629; making a total of 1,336, of whom probably one-half were, in colonial phrase, either “conditional pardons” or “expirees.”* The check administered by the Act was decisive, for in 1858 the number was reduced to 184; in the next year to 156; and the year after to 114. In consequence of the Victorian and South Australian Acts, the captains of traders were unwilling to take passengers to either of these colonies from West Australia, and generally preferred to go to Sydney, at which port no such Act was in operation. The South Australian Act did not, like that of Victoria, extend to expirees, but only to the conditional pardons. The Home Government have intimated, within the present year, that this “conditional pardon” expedient of convict colonies, which has been so vexatious to their neighbours, is to be entirely abrogated.

APPENDIX B.

Comparative View of the Inequality of the Sexes in the Population of the Australian Colonies, and of other Countries.

Colony or Country.	Date of Origin.	Last Census.	Total Population.	Males.	Females.	Females in 100 of Population.
New South Wales	1788	1861	358,278	202,099	156,179	40·6
Tasmania	1803	“	90,211	—	—	—
West Australia	’29	“	15,691	9,852	5,839	37·2
New Zealand	’40	“	106,315	67,335	38,980	36·7
South Australia	’36	“	130,627	67,254	63,373	48·4
Victoria	’51	“	541,800	321,724	220,026	40·6
Queensland.....	’59	“	34,367	20,811	13,556	39·4
Total	—	—	1,277,289	—	—	—
New Brunswick	—	1861	252,047	129,948	122,099	—
Nova Scotia.....	—	“	330,145	165,233	164,912	—
Prince Edward’s } Island	—	“	80,857	40,880	39,977	{ almost equal
Newfoundland	—	“	122,638	64,268	58,370	—
England and Wales	—	“	20,066,224	9,776,259	10,289,965	—

Note.—Several of the Australian colonies were settled more or less before they became separate Governments; as Victoria, which, as part of New South Wales, was first colonised in 1834-35, and Queensland, another part of the same colony, about 1840. New Zealand also had been partially colonised from Australia before being proclaimed a colony.

The excess of males in our younger colonies and of females in the mother country are mutually explanatory, as resulting from a continuous excess of male emigration from home to these colonies. The males born in England and Wales, as indeed in the world generally, are slightly more in number than the females, emigration in after life being the chief cause of reversing these original proportions.

* Mr. Newland to Royal Commission, “Minutes of Evidence,” p. 223, &c.

APPENDIX C.

ENGLAND AND WALES—*Crime Proportioned to Destitution. Increased Ratio with Unfavourable Years, and vice versâ.—Committals for Trial.*

Year.	London Metropolitan District.	England and Wales.	Remarks.
1843.....	4·6	—	} Cheap food and abundant employment
'44.....	4·9	26·5	
'45.....	4·3	24·3	
1846.....	5·1	25·1	} Dear food Bad business ,, French revolution
'47.....	5·9	28·8	
'48.....	5·5	30·3	
1849.....	4·6	27·8	} Generally years of cheap food and good business
'50.....	4·5	26·8	
'51.....	4·5	28·	
'52.....	4·4	27·5	
'53.....	4·4	27·1	
1854.....	5·2	29·4	} Dear food Foreign war High interest of money Severe crisis
'55.....	3·9*	*26·	
'56.....	3·2	19·4	
'57.....	3·1	20·3	
1858.....	2·7	17·9	} Cheap food Low interest Good business
'59.....	2·9	16·7	
'60.....	2·8	16·	
1861.....	3·	18·3	} Dear money and food Scarcity of cotton, American war
'62.....	3·6	20·	
'63.....	—	20·8	

* This year the Criminal Justice Law gave increased powers of summary jurisdiction to the magistrates, which caused the reduction in the committals of that and succeeding years. The results are still useful for purposes of comparison.

Note.—In opposition to the above home results, what are termed “good times” in these colonies usually indicate a greater ratio of crime than the “bad times.” The explanation is, that the means of all classes in the colonies are generally, in all times, whether the so-called “good” or “bad,” sufficient for healthful and even comfortable subsistence; and that the “good times” are often characterised by extravagance, particularly in a large consumption of alcoholic drinks, which has the usual result of increasing crime.

STATISTICS of LIVE STOCK in the UNITED KINGDOM, 1853-63.

By ROBERT HERBERT.

[Read before Section (F) of the British Association, at Bath, September, 1864.]

IN the consideration of the production of live stock for consumption in the United Kingdom, many features of special interest present themselves. Of late years, much has been written in reference to agricultural improvement, and, in some quarters, it has been affirmed that we are in a position to raise every head of stock necessary for consumption, without the aid of the foreign grazier. It might be considered an important matter to render ourselves independent of the producers in Holland, Denmark, Germany, and Spain; but the question here arises—how are we to accomplish so desirable an end? The rapid increase in the population of Great Britain during the last ten years, and the consequent increase in the consuming powers, added to the extraordinary progress of trade and commerce, and the improved monetary position of the great mass of the consumers of meat, prove beyond a doubt that the period has now arrived when strenuous efforts are absolutely necessary to meet a demand that must continue to have a most important bearing upon price. At the present time, both beef and mutton are selling at fully $1\frac{1}{2}d.$ per pound above the rates current twenty years ago. Prices are still tending upwards, and the prospect is, that the quotations will rule high for a considerable period, notwithstanding that we may continue to import liberally from abroad. Had it not been for a free importation from the continent, nearly all kinds of meat would, long ere this, have been selling at enormous prices. Consumption must of necessity have declined; and a certain amount of discontent must have been apparent amongst the labouring classes. But let us see what has been our actual dependence upon the foreigner. In 1853 we imported—

Beasts	125,253
Sheep and lambs.....	230,037

In 1863 the supplies received were:—

Beasts	150,898
Sheep and lambs.....	430,788

The increase in the ten years, therefore, is only about 25,000 of the former, and 200,000 of the latter. These supplies, however, though

for the most part, in very middling condition, have materially assisted the consumption and prevented prices from advancing to dangerously high figures. We could all desire to see home production keeping pace with the demand ; but if we closely examine the returns of the great Metropolitan Market—which has to furnish a supply for nearly 3,000,000 people—we shall find a state of things which would appear to shake confidence as regards our powers of production. In 1853 and 1863, the total supplies of stock disposed of in the above market were :—

	1853.	1863.
Beasts	252,624	288,177
Sheep and lambs	1,325,474	1,389,142
Calves	20,395	23,291
Pigs	34,677	53,985

From the above figures, we must deduct the numbers of foreign stock offered, in order to see how far production has increased in the United Kingdom. Those numbers were :—

	1853.	1863.
Beasts	52,344	72,907
Sheep and lambs	220,429	285,296
Calves	22,619	26,630
Pigs	8,508	17,562

It follows, therefore, that the increase in home-fed beasts in the ten years was trifling in the extreme, and that there was a falling off in the supplies of English sheep in 1863 compared with 1853. Here, it will be perceived, the question assumes more than ordinary importance, because the progressive nature of our home and foreign trade, and the increased power of purchase and consumption must, at no distant date, tell seriously against the consumers. Let us now see how prices have ranged in the ten years. In 1853 and 1863, they were as under :—

	1853.	1863.
	<i>s. d. s. d.</i>	<i>s. d. s. d.</i>
Beef, from	2 6 to 5 -	3 4 to 5 2
Mutton	2 6 „ 5 4	3 6 „ 6 2

In the period here alluded to, then, inferior beef has advanced 10*d.*, and all kinds of mutton 1*s.* to 1*s.* 2*d.* per 8 lbs., although, as I have shown, the arrivals from abroad have continued to increase. If we refer to 1842, and to the ten years prior to that period, we shall find even a greater difference in value. The best Scots were seldom worth more than 4*s.* 2*d.* to 4*s.* 6*d.*, and the best Downs 4*s.* 6*d.* to 4*s.* 8*d.* per 8 lbs. There is, therefore, a much larger profit to the grazier, without a corresponding increase in the supplies.

We will now consider from what quarters London has derived its supply of stock. In 1853 and 1863, the arrivals were :—

	1853.	1863.
Lincoln, Leicester, and Northampton	56,650	66,980
Cambridge	60,490	70,790
Other parts	31,700	27,580
Scotland	18,446	12,823
Ireland	10,200	12,944

This statement shows that we received about 20,000 more beasts from Lincoln, Leicester, and Northampton in 1863 than in 1853; and that the arrivals from other parts of England, as well as from Scotland, have fallen off. Ireland exhibits a slight increase; but the quality of the arrivals from that country shows no improvement. In reference to the deficiency in the receipts of beasts from Scotland, a few observations are necessary, because we must not take the London market as a test of the productive powers of that country. Every year stock has increased in number, but the additional supplies have found their way to London and various parts of the country, in the shape of dead meat. In the ten years ending with 1853, about 20,000 carcasses of beef, and 200,000 carcasses of mutton, received from Scotland, were annually disposed of in Newgate and Leadenhall. In the ten years ending with 1863, the average number of the former received by railway and steam-boats was 27,000; of the latter 300,000. It follows, therefore, that the production of food in Lincolnshire, Leicestershire, Northamptonshire, Norfolk, Suffolk, Essex; and Scotland, has steadily increased during the last ten years. And were it not that the dead markets were from time to time heavily supplied with meat from Scotland, Yorkshire, &c., prices would have been unusually high; since it is evident that the quantities of stock exhibited in the cattle market are wholly inadequate to meet consumption. Again, we may remark that, at various periods of the year, large numbers of prime beasts and sheep are purchased in London for transmission to the various outports and watering places. It would be difficult to

ascertain the quantity of meat annually consumed in the Metropolis, but we may consider it about as follows:—

Beasts	250,000
Sheep and lambs	1,500,000
Calves	20,000
Pigs	400,000

The enormous supplies required year by year prove that great efforts will be necessary on the part of our graziers to meet the still increasing volume of trade. If, however, we consider the progress made in the rearing and feeding of stock in some parts of England, we shall find reason to apprehend that, to some extent, we are in a non-progressive state. We have shown that the great grazing districts, viz., Lincolnshire, Leicestershire, Northamptonshire, Norfolk, and Suffolk, continue to maintain their superiority; but what, it may be asked, is the barrier to progress in other quarters? Some remarkably fine Herefords and Devons are disposed of in London; but the number is too small to have much influence upon price. Lincolnshire and Norfolk, especially, continue to furnish the full quota of prime stock, and Scotland supplies us with animals of a first-rate character. But what are all other districts about? The consumers now offer a price which, it must be admitted, is highly remunerative; the wants of the country are increasing every year; and those who have succeeded in getting possession of prime stock for breeding purposes are making large fortunes. Some twenty or twenty-five years ago, Pembrokeshire furnished us with from 6,000 to 7,000 head of beasts every season. Now the number available for the Metropolis does not exceed 600 or 700. Again, the Metropolis could rely upon some 8,000 or 10,000 Romney Marsh sheep—one of the finest breeds in England. Now, very few find their way to London, although high prices are offered for them. Those two sources of supply have, therefore, been partly dried up, and we are compelled to look to the favoured districts and to Scotland for an adequate amount of food.

I have no desire to draw invidious comparisons, but it is well known that Lincolnshire, Norfolk, and most of what are termed the “crack” grazing counties in England, are farmed by rich men. Some of them have leases; their lands are, with very few exceptions, well drained, and they have succeeded in raising a highly valuable breed of stock. In Scotland, nearly the whole of the land is let upon a nineteen years’ lease;—need I say that the Scotch grazier has an immense advantage over the English breeder, who is merely a tenant at will? Leases, I am aware, are common in England, but if we are to raise an increased supply of food, they must become more general, and their covenants must be of a liberal character. The grazing community in Norfolk, Leicestershire, and Scotland are now

raising stock of a first class character; and of late years they have adopted a system of breeding which has added materially to the supply of food. The famous short-horned breeds have been largely introduced into Scotland, and been used for crossing purposes amongst the best Scotch breeds. The result of this mixture has been early maturity—that is to say, Scots, or rather crosses, are now forwarded to London from Scotland weighing from 80 to 100 stones of 8 lbs. each, under 2 years' old. Formerly, so much weight and quality could not have been produced under from $3\frac{1}{2}$ to 4 years. The result is, that very few really pure Scots are now to be met with either in Scotland or Norfolk, except for breeding purposes. This, perhaps, is one of the secrets why stock has not further advanced in price. But is there no possibility of carrying out the system further? I am aware that many graziers in England are opposed to the crossing system, and that they prefer the pure breeds to any other, on principle. There are, however, obvious difficulties in the way, which time alone will remove; clearly the soil of England, as a whole, is not half drained, and in too many counties it is badly farmed. Not a few of the farmers are labouring under the great disadvantage of the want of capital; and the majority of them are without leases. Inferior drainage, poor pastures, and a slothful attention to the wants and capacities of the land, would never meet the wants of lean stock from Scotland; and were the stock placed upon other than strong pastures, the losses would be serious. Again, the small grazier, with limited means, cannot give the enormous prices demanded for the short-horned bulls. The consequence is, that there is virtually a monopoly in the production of food; and nothing short of an enormous outlay of capital in other counties for drainage and other purposes, together with a more general system of letting land upon moderately long leases, will ever destroy it. At present, the prospect is, even with an increased importation of stock from abroad, that all kinds of meat will be very high in price for a long period. We must bear in mind that France, like ourselves, is suffering from a scarcity of stock compared with the consuming powers of the country. Last year, the imports into France, chiefly from Holland, Germany, Belgium, and Spain, amounted to nearly 600,000 head, and yet prices ruled high. From that country, therefore, we can expect no aid, because she is now competing with us for a supply of food.

Here let me remark that the Norfolk and Scotch graziers possess great advantages in the production of stock. They have wisely turned their attention to the cultivation of beet-root and turnips upon extensive breadths of land. They have succeeded in raising enormous crops upon a moderate description of land, and secured ample supplies of cattle food for winter consumption. It has become

imperatively necessary that the breeders in other counties should, if possible, follow their example.

To show more fully the great changes which have taken place of late years in the various breeds of beasts exhibited in London—and which may be taken as a fair index of the whole country—I may observe that, in 1853, the percentage of the short-horns was about 30; of Herefords, 13; of Devons, 11; of English crosses, $12\frac{1}{2}$; of polled or Scotch cattle, 10; and of Scotch crosses, 1.50. Welch runts figured for 10 per cent. of the total supplies. Last year, the percentage of the short-horns increased to 35; Herefords declined to $9\frac{1}{2}$; Devons to 5; English and Scotch crosses advanced to 20; but Welch runts figured for only 1.75. It will, therefore, be perceived that the short-horns and the various crosses are furnishing the Metropolis, so far as live stock is concerned, with a moiety of the supply.

In the production of sheep, equally important changes have taken place of late years; indeed, so extensive have they become, from the adoption of the system of crossing, that some breeds, once in great favour with the butchers, are becoming almost extinct. In 1853, the percentage of the pure Lincolns exhibited in the Metropolitan Market was 28; of Leicesters, 26; of South Downs and Hampshire Downs, 10; of crosses, 15; of Kents, 5. In 1863, Lincolns declined to $21\frac{1}{2}$; Leicesters to 22; and Kents, to 3. South Downs and Hampshire Downs figured for $15\frac{1}{2}$; crosses, 21. It is satisfactory to find that the new system, though it has failed to meet consumption, has been conducted on a good basis—that is to say, the best and most enduring breeds of both beasts and sheep have been selected by the breeders for crossing purposes. But the system of crossing may, without the exercise of great judgment on the part of those most interested, be carried too far. So long as care is taken that there is an ample supply of pure blood to breed from, so long will the system continue. Without pure blood, however, we shall raise only a mongrel and profitless description of stock of very little value either to the feeders, butchers, or consumers.

In conclusion, I may observe that there is no actual want of supply of stock in England. It would be impossible, in the absence of statistical details, to give an accurate statement of the numbers in each district; but my impression is, that the number of beasts is about 4,700,000; of sheep, 32,000,000 head. These numbers, however, are about the same as we had some twenty years ago; hence it follows, that even the new system of crossing has, from the enormous consumption going on of late years, failed to insure for us what may be termed an abundant supply of food. Meat, therefore, assuming that the country continues in a flourishing state, must of necessity continue high in price for some time.

*On the "CIDER-TRUCK" SYSTEM in some parts of the WEST of
ENGLAND. By EDWARD SPENDER.*

[Read before Section (F) of the British Association, at Bath, September, 1864.]

A POPULAR English novelist has laid the scene of one of his tales in a Devonshire town, and has set his hero to achieve the arduous task of converting the inhabitants from the love of bad cider to that of good beer. Mr. Trollope confides to his readers his belief that Luke Rowan will be unsuccessful, and those persons who are well acquainted with Devonshire and the other cider-producing counties will be inclined to share in the opinion expressed by the author of "*Rachel Ray*."

The making of cider is one of the few manufactures of the West of England. The members of the British Association will find this district in most respects the very reverse of that in which they held their last meeting. Somersetshire and the adjacent counties are essentially agricultural, and this very manufacture, of which we have spoken, is carried on in the farm house, and within the very shadow of the orchard. It gives few tokens of its existence; no chimney stack or spoil bank indicates its presence; it scarcely appeals to the senses at all. It is quite possible that it may be overlooked altogether; and yet the writer who should attempt to do for the western counties that which Dr. Wilson did in his most interesting paper last year for the northern, would present a very imperfect picture if he did not describe the influence produced upon the labouring classes by what has been called the cider system, or, with less euphony and more precision, the cider-truck. The single fact, that the agricultural labourers in the cider-producing counties, and especially Herefordshire and Devonshire, receive from 20 to 50 per cent. of their wages in cider, is sufficient proof of the immense influence of this manufacture on their condition. Viewed as a question of political economy, one cannot but be surprised that, while the laws against the truck system in the mining and manufacturing districts are so stringent, the agricultural labouring class should be left so completely to the mercy of the employer. There is no article of consumption which is more liable to adulteration than cider, consequently there is none in which the purchaser under the truck system is more likely to be imposed upon by the seller. That the Act 1 and 2 William IV, cap. 37, for rendering the truck system illegal, was not extended to the agricultural districts, was no doubt due to political rather than

to politico-economical considerations. Dread of the opposition of the landed gentry had far more to do with this limitation than any logical principle had. Moreover, while the miners and factory operatives loudly demanded this protective measure, the farm labourers, less sharp-sighted and alive to their own interests, took no part in the agitation;—more than that, a large number of them would feel aggrieved now if such a measure were extended to meet their case. To give them money instead of cider would displease many of them, even though they would still be at perfect liberty to buy the cider for themselves.

But what is cider? Is it food or poison? or both, or neither? According to an analysis made by Professor Voelcker, an imperial pint of cider drunk by Somersetshire farm labourers contained more than 94 per cent. of water, and a minute fraction of flesh-forming matters. Compared with wheaten bread, the difference of nutritive power is enormous. Thus—

	Cider Contains	Bread Contains
	Parts.	Parts.
Water	94·21	36
Flesh-forming matters	·02	8
Heat-producing „	5·57	56
Mineral matters	·20	—
	100	100

Hence, according to Professor Voelcker, a person would require to drink nearly 8½ gallons of cider in order to take into the system the same amount of carbon, or heat-producing constituents, as is contained in a pound of wheaten bread; and in order to obtain the same amount of nitrogen, or flesh-forming constituent, he would have to swallow 32 gallons of cider. Compared with meat, the difference is of course far greater. Cider can, therefore, scarcely be called food. It would be going too far, on the other hand, to call it poison—that is to say, when it is pure—but the cider drunk by the lower classes is rarely pure. It is too often a noxious compound of chemicals which produce diarrhoea and colic. To make the cider given by the farmers to their labourers, the “cheese,” as the apple-pulp is termed, having already given a first and a second quality, is expected to give a third; but the strength and the flavour of the cheese have long been exhausted. It is usual, therefore, to throw a cold decoction of hop over the cheese, and, by way of giving it acidity, to place a piece of blanket soaked in melted sulphur and lighted in the bung-hole of the cask. By this means sulphurous and sulphuric acids are generated,

with very disagreeable results to the drinker. It has been stated that cider produces rheumatism, and that a large number of the patients at the Mineral Water Hospital in this city come from the cider districts. The case-books of the physicians and the surgeons to the hospital scarcely bear out this idea. There seems, however, to be one form of disease connected with cider drinking, which is due rather to the adulterations than to the cider itself. The symptoms of this disease resemble those of lead poisoning, and probably do actually arise from lead poisoning. If this be so, the circumstance must arise from the action of the sulphuric acid above-mentioned upon the lead vessels into which the cider is sometimes poured.

Whether pure cider be or be not wholesome is not the matter at issue in the present paper. The labourer does not get pure cider; he gets a beverage of such a kind that it does unquestionably injure his health. A medical man, long resident in the very centre of the chief cider district of Somersetshire, has stated that a failure of the apple crop has the same favourable effects on the health of the labourer as the good drainage of a parish has on the health of the inhabitants generally. The excessive quantity of cider drunk during harvest time is another source of illness, and often of accidents. Many farmers will give their labourers at such a time an unlimited supply of cider, under the mistaken notion that it will stimulate them to work better. With such licence given him a man will drink from 8 to 20 pints a-day. The effects are serious. This vast quantity of an alcoholic drink vitiates the blood, by preventing the removal of excretions at the very time that the excretions are being increased by the waste of the muscular tissue which the use of alcohol causes. Even if no serious effects follow the unlimited absorption of cider, the farmer makes a great mistake in permitting it. It cannot be too emphatically remembered that stimulants call forth strength, but do not give it. Supposing that the labourer, under the influence of large potations of cider, works more vigorously to-day, he will work much less vigorously to-morrow. He has been drawing upon his capital of strength, and all the cider in the world will never replace it. Had he chosen a diet of bread and meat and cocoa, he would have been keeping his capital intact. Nor is this mere theory. The question has been fairly tried. The late Reverend W. J. Connybeare relates a case, in which 80 acres of grass were mown, harvested, and stacked by men who abstained altogether from alcoholic drinks, and who accomplished their work far more quickly than any other mowers in the neighbourhood. Both practice and science, therefore, shew that cider is certainly not food, and it would seem that the adulterated cider commonly drunk is not very far short of being poison.

Leaving chemistry for political economy, we are at once struck

with the thoroughly unscientific nature of the cider-truck system. It is, in fact, more unscientific than that species of truck which is forbidden by the Act of thirty-four years ago. Under that system the employer did not sell his own produce at a certain fixed sum, not to be altered according to the changes in the money value of that produce. But, in this case, the farmer gives a fixed quantity of cider in lieu of wages, irrespective of the rise or fall in the value of cider, caused by the scarcity or abundance of the apple crop. The result is, that just as the farmer is receiving the least return, he is making the greatest outlay. When a poor apple crop reduces his profits, he is paying the highest wages; while when, on the contrary, the apples are abundant, and he could afford to pay his labourers highly, he is really paying them less than usual. Supposing the cider to be genuine, the farmer in a bad year may be paying wages at the rate of 18s. per week, while in a good year he will be paying at the rate of 12s.; this fact alone is a strong inducement for the farmer to adulterate the favourite beverage. He cannot afford to give good cider in bad times, and having once formed the habit of adulterating, he cannot lay it aside when there is no need to resort to it.

There is another strong objection to the system, derived from politico-economical considerations. While the ordinary truck system, improvident as it is, does allow the labourer a choice of articles to be received in lieu of money, the cider-truck permits no such liberty. The labourer is glutted with one article, and that article one which, considering the amount of his wages, he cannot afford to have at all, much less to have in such quantities as this arrangement forces upon him. In Herefordshire, it has happened that a farmer paid his labourers 9s. a-week in money, and during harvest time nine gallons of cider a-week. He was then selling similar cider for 1s. a gallon; so that the labourer was actually receiving 50 per cent. of his wages in cider. Were this beverage ever so harmless, it would have been an act of the most reprehensible extravagance for the man to have spent half his income in drink. A person of the upper classes, who squandered that proportion of his income upon his cellar, would run the risk of an inquiry into his sanity by the Lunacy Commissioners. Yet not only is nothing said in opposition to the extravagance of the labourer, but he is actually forced to commit it.

Even in less glaring cases, where the proportion of the wages paid in cider is 20 per cent., the principle is equally bad, and the results little less lamentable. The mere fact that a man, who is a husband and a father, forces a fifth of his earnings down his throat, and sees his family condemned, by the smallness of the money he brings home, to forego the taste of meat, this reflection must in time harden him and make him intolerably selfish. Were the labourer compelled to spend a fifth of his earnings on snuff or tobacco, the

hardship would be apparent at once; but as the farmers' interest consists in getting rid of the cider, the labourer's interest is altogether disregarded. He is made the receptacle for so much liquor, and he and his children are deprived of the animal food that wages paid entirely in money would have enabled him to procure.

It has been urged, in behalf of this system, that it prevents the labourer from resorting to the drink-shop. But it is of small advantage to the labourer to be drenched, *volens volens*, by his master, instead of at his own option by the publican. The man who drinks 9 or even 5 gallons of cider a-week may perhaps have small inducement, so far as the drink is concerned, to enter the public-house; but the desire for companionship draws him thither, and once there he must spend something for the good of the house.

As a matter of fact, in spite of the cider-truck, cider shops abound in the western counties, and are frequented by the agricultural labourers who, having already sacrificed from a fifth to a half of their wages by receiving a payment in cider, are now prepared to spend a portion of the money residue in fresh libations. It is absurd to suppose that a system so subversive of the first principles of prudence would teach the labourer economy and self-denial. The cider-truck enforces selfishness, and it is not to be wondered at if selfishness prevails. Under any circumstances, that professedly paternal system by which the employer undertakes to determine for the employed what he shall eat and drink, and wherewithal he shall be clothed, is highly objectionable, inasmuch as it destroys the independence of the employed; and when the only operation of that system is to provide that the employed shall spend from a fifth to a half of his earnings in drink alone, it has not even the recommendation of paternal consideration.

There are some ways in which the principle may be adopted almost without objection. The farmer who allows his labourer to purchase of him wheat or flour or bacon at cost price, or who lets him a piece of garden as a part of his wages, confers a real benefit. But for the advocate of the cider-truck not one good word can be said. He encourages improvidence and intemperance on the part of the labourer, and he virtually robs the labourer's wife and children of the necessities of life.

Great and obvious as are the evils connected with this system, they are by no means easily remedied. When men suffer from a wrong, the redressers of that wrong count upon the assistance of the sufferers. But in this case the sufferers acquiesce in the wrong, and resent redress. The great majority of the older labourers prefer the present usage to that of paying them the whole of their wages in money. The drinking habit becomes confirmed, and the drinker likes to drink with an easy mind. His conscience would perhaps

smite him were he to spend 5s. or 9s. a-week at the cider-shop when he was receiving 14s. or 18s.; but he has no compunction when this extravagance and selfishness are veiled under a custom which he did not originate, and for which he does not feel responsible. It is sadly illustrative of the baleful moral effects of this system, that while the young and newly-married labourer, whom custom has not rendered selfish, will generally prefer to have the whole of his wages in money, in order that he may take them home intact, the labourer grown old under the cider-truck system will prefer that system, though he has not only a wife but a family of children to support. The moral nature has been corrupted, and a factitious appetite for physical stimulants has been created, a craving that is remorseless in its selfishness. Hence the opponent of the cider-truck is told by its supporters, that they who are most concerned approve of it, and that it is absurd to make a grievance out of that which is generally approved.

Nor is this the only difficulty; while the reformer is deprived of the allies that he expected, he has to encounter very formidable antagonists in the advocates of the present state of things. A few years ago a series of questions with regard to the cider-truck were largely circulated amongst the farmers of the cider districts, and in the answers the farmers, to a great extent, supported the continuance of the system, some honestly and openly, and the rest probably secretly, "because," to use the words of the most outspoken, "a good deal of cider is made in the district." In a fruitful year the cider is made sometimes more rapidly than it can be disposed of. In Herefordshire, for instance, a few years ago the small farmers, not having casks for their new supply, made a cask or two at a time, and then drank it off as fast as they could for fear of the remaining apples being lost. Of course, under such circumstances as these, it would be difficult to persuade the manufacturers to deprive themselves of one of their chief markets. This objection would however be met, were the manufacturers more desirous of obtaining quality than quantity. There is no doubt that the quality of cider has degenerated during the last half century. This ought not to be, now that railways have opened distant markets, and now that greater wealth is available for the purchase of luxuries.

As in most things, the chief difficulty in abolishing the cider-truck is in the outset. When both employers and employed are wedded to the system, it is very hard to obtain even an experimental alteration. Where that preliminary difficulty has been overcome, the experiment has generally succeeded. Several influential agriculturists, especially in Somersetshire, have, *proprio motu*, substituted a money payment for cider, and, as a rule, the labourers have after a time approved of the change. But, to produce satisfaction, it is absolutely

necessary that the labourer should feel he is receiving a fair substitute. Although the political economist may see it would be for the benefit of the labourer if he were to receive only a penny even in cash for every shilling's worth of cider, it is not to be expected that the labourer himself will see this. The Englishman of all men will insist upon having his full money's worth. If he has engaged a vehicle for a journey, he will ride in it the whole way, although his inclination prompts him to walk a part of the road. So the farm labourer will, if his cider is commuted into money, expect the very uttermost farthing. This may lead to disputes, especially where the farmer has been putting a higher nominal value on the cider he supplied his labourers than the cider was really worth. But even this question is not so likely to be fertile of disputes as the present system, which gives rise to endless quarrels about quality and quantity, and often causes much enmity between employers and employed. Moreover, in the first case, the dispute once settled is settled for ever; whereas in the latter it is perennial. In fact, the substitution of the money payment is analogous to the settlement of the tithe question by the Tithe Commutation Act; and just as this Act put an end to the interminable heart-burnings between the clergy and the farmers, so the payment of wages in money instead of cider would get rid of the present wrangling between the farmer and his labourers. But while the monetary compensation was fixed by the legislature in the first case, it would be difficult, if not impossible, to make a similar provision in the second. All that the legislature can do is to extend the operation of the Truck Act to the agricultural districts, and the two parties interested must make some equitable agreement as to the details for themselves. That such a consummation should be obtained, is to be devoutly wished, on the score both of good morals and sound political economy.

The SANITARY STATISTICS *of* SALISBURY. *The* YEARS 1841-49
and 1856-64 *Compared.* By A. B. MIDDLETON, Esq., M.R.C.S.

[Read before Section (F) of the British Association, at Bath, September, 1864.]

HAVING been requested to furnish some account of improvements carried out at Salisbury, under the powers of the Public Health Act, I purpose—

1. To describe some local peculiarities, natural and artificial, of the site and city of Salisbury.
2. To make some remarks upon its past sanitary condition in ancient and in modern times.
3. To describe the works done for drainage, sewerage, and water supply, with the cost thereof.
4. To describe the condition of the city since the works were completed—for the last *nine* years.
5. To conclude with a few general remarks.

1. *Local Peculiarities.*—Rather more than 600 years ago, the inhabitants of Old Sarum, for various reasons—a chief one being want of water—descended from the old dry Down by the river, or Sorbiodunum, into the valley, more than a mile to the south, and in a field, according to tradition, called the Merryfield, near to the conflux of three rivers—the Avon, Wiley, and Nadder—built their new cathedral and city. The present parliamentary city or borough of Salisbury, includes the large suburb of Fisherton Anger on the west side of the River Avon, in addition to the Close and city proper, with a portion of Milford. The Close, Fisherton, and Milford, are in registration districts of the Alderbury Union. The city proper, consisting of three parishes, St. Edmund, St. Thomas, and St. Martin, is a registration district, with a population of rather above 9,000, and unless specified otherwise, the statistical and other remarks about to be made will refer to this district, the population of which is strictly *urban*, and but little changeable.

Surrounded by chalk hills, forming part of Salisbury Plain, the city of Salisbury is situated upon the east bank of the lower Wiltshire Avon, 140 feet above the level of the mouth of that river, where it joins the sea at Christchurch, about 30 miles distant. The city consists of about twenty streets, placed at nearly right angles; these streets covering about one-fifth of a square mile. This division of the ground into squares, called chequers, was made at the time of planning the new city, and evidently was intended to have

secured large yard-lands or open spaces free from buildings—a wise object, which has been frustrated by numerous buildings for a long time past. The ground is pretty nearly level, having a very gradual incline of about 1 in 300, towards the south, except on the east side, where it rises sharply towards Milford Hill, the city extending a short distance up that hill, but to little altitude. At the south side of the city, separated by a wall, and until lately by a ditch, is the Close, belying one usual meaning of its name, inasmuch as it is a large *open* space, one-half of the size of the city, containing the cathedral in its centre, and about 80 houses. West of the Close, the Avon is joined by the Nadder and Wiley—considerable streams—and the three united having passed under Harnham Bridge to the south of the Close, flow eastward, and then turn somewhat to the north, so that Salisbury and the Close are inclosed within a loop formed by these rivers; a straight line from the Avon at the north end of the city to a point at the south-east corner thereof, being only 1,500 yards, whereas the course of the river around the city and Close is 2 miles. This quasi-peninsulated position was found most useful in the drainage operations. All the rivers are very rapid; there is no marshy ground in, or near to, the city, except about a mile to the northward, where some land by the river Avon is made swampy, owing to the existence of a mill-leat. This might readily be remedied, and sound meadows be made, merely by the introduction of a tube of iron under the river. The east of the city is bounded by Milford Hill, and the north by arable land gradually rising to a considerable altitude at Old Sarum and Bishop Down. The rivers are little liable to floods, a rise of even 3 or 4 feet above the ordinary level very rarely occurring, and much of that appears to be owing to obstruction presented by the old stone bridges with very wide buttresses. The ground upon which the city and cathedral were built, as before said, was called the Merryfield, which perhaps would indicate it as one used for sports, therefore naturally dry at the surface. Apart from this tradition, an examination of the locality will show that, before a mill-leat was made, the ground upon which the city stands must have been several feet higher than the natural level of the Avon: how the subsoil of the city became saturated with water, almost to the surface, will presently appear. The subsoil is a black mould, for a depth varying from a few inches to some feet, this resting upon a mixture of variously-coloured clays and sands, and these upon a bed of gravel; this gravel is firm, piles cannot be made to penetrate it, and it exists all across the valley at the same level, as made apparent by the depth at which it has been reached in making foundations for railway bridges and in building the main drains; this depth is about 9 feet from the average surface. Water percolates very rapidly through this gravel, and the subsoil itself is

very porous, except in places where bunches of clay intervene. In making the drains it was found that these underground patches of clay formed basins, in many cases holding the water up within 2 or 3 feet from the surface.

A chief peculiarity of the city of Salisbury was, until lately, presented by certain canals or water courses, in nearly all the streets. As these water courses not only formed a strikingly peculiar feature of the city, but exercised a very detrimental influence upon the comfort, and, in my opinion, upon the health of the citizens, I will give some particulars about them, as to their state in ancient and in modern times. When it is remembered that one main cause of the migration from Old to New Sarum was the want of water in the old city, it is probable, though no documentary evidence exists to prove it, that the canals were cut through the streets for water supply; all of them were derived from the mill-leat, except the new canal, which was taken from the mill-tail. The Close ditch, derived from the Avon below the mill, was made with the wall for purposes of defence. The canals originally were in the middle of the streets, and evidently became used as cart roads; for in 1615 an order was made, the execution of which was to be enforced by penalty, viz., "that bars be set up at the sides of the streets to keep down 'brewers' and other carts in the rivers." There are occasional notices of these canals in old writers, which show that their original cleanliness had become neglected; but there is one particular notice in the council books which proves that the citizens were not altogether dead to the propriety of such cleanliness; indeed, they most probably had some idea of that truth which it has been found so difficult to impress upon their successors, namely, that dirty canals and disease were somehow intimately connected. This curious notice is in 1616, as follows: "Forasmuch as the Pudding Bridge hath
" always been repaired by the butchers of this city, and yet now the
" butchers refuse to do the same; and whereas the butchers do now
" sell their beasts' bellies to poor women and others, that pudding
" wives do empty these bellies in the rivers in the streets, it is,
" therefore ordered, that the butchers shall maintain the said bridge
" or some other place, not noisome to the city, and wash at that
" bridge, or at the great rivers, or some other back river, that
" *runneth not into the open streets*, upon pain of forfeiture for every
" offence 5 shillings."—(Ledger C, folio 251). How strange that 240 years after this careful attempt to keep things *noisome* out of the canals in the open streets, the authorities of this same city should have advocated the continuance of open channels as sewers, into all of which the contents of very numerous water-closets were being passed. In reference to the influence of corrupt air upon health of man, it may not be generally known that the "wisdom

“of our ancestors” was greater than that of some moderns, and that the press of Caxton himself was employed in the cause of “sanitary reform.” In the third parliament of Henry the Seventh, the importance of the subject was fully recognised, as shown in an Act passed therein—which I am fortunate in being able to quote from one of Caxton’s own printed copies of the “Statutes:”—

¶ “Ayent Bochers.

“Item it was shewed by a peticyon put to the kyng our sayd souereyn lorde “in the sayd parliament by his subgettes and paryshens of the parishe of Saynt “Feythes and Saynt Gregories in London, nygh adioynaunt unto the cathedrall “chirche of Powles, (that it was soo that grete concourse of peple as well of hys “roiall persone, as of other grete lordes and astates, wyth other his true subgettes “often tymes was had unto the sayd chathedrall chirche, and for the most parte “through oute the parisshe aforesaid, the whiche often tymes ben gretly ennoyed “and inuenemed by corrupt eires engendred in the sayd parisshe by occasion “of bloode & other fowler thynges by occasion of the slaughter of bestes & “scaldynge of swyne, had & done in the bocherie, of Seynt Nycholas flesshamels “whos corrupcyon by violence) of unclene and putrified waters is borne downe “through the sayd parishes and compasseth two partes of the palays where the “kynges moost royale persone is wount to abyde whan he cometh to y^e cathedrall “chirche for ony acte there to be doon to the Jubardouse abyding of his moost noble “persone, and to ouer grete ennoisaunce of the parysshens there, and of other the “kynges subgettes & straungers that pass by the same.” It goes on to say that “in few noble citees and townes or none wythin cristendome” is the slaughtering of “bestes wythin the walles” allowed, “least it myght engender sicknesse to the “destruction of the peple.” And further to enact that penalties be imposed for slaughtering within the city “for every oxe 12 pens and every kowe and for every “other best 8 pens.”

The canals of Salisbury seem always to have had great importance attached to them. Old Fuller thought them worthy of notice, as follows:—“As for Salisbury, the citizens thereof have derived the “river into every street therein, so that the city is (like Venice) “a heap of islets thrown together, according to the epitaph of “Mr. Francis Hide, a native of this city, who dyed secretary to the “English Leger in Venice:—

“Born in the English Venice, thou didst dye,
“Dear friend, in the Italian Salisbury.”

To any one acquainted with these canals in recent times, this comparison with Venice must appear silly, but when the couplet was written, it was a trifle less ludicrous, for the canals were a few yards wide, and in the centres of the streets, having, as beforesaid, been used as cartways. In an old map by Speed, dated 1610, this arrangement is clearly shown.

In recent times, as doubtless is remembered by most visitors to Salisbury, these canals were only about $1\frac{1}{2}$ to 2 or 3 feet wide, lined with bricks, the water therein flowing nearly level with the streets, and about a foot or 18 inches deep; in heavy rains often overflowing into the streets. When this confining of the watercourses to the

sides of the streets and building them with bricks took place is not known, but it must have been after 1625, for in that year a petition was presented by the citizens to the Privy Council, when the king was at Wilton, stating that their streets and waterbanks were in a dilapidated and ruinous condition, that the inhabitants were for the most part poor, and unable to contribute towards their repair, praying for the consideration of the Council. An order was made by the Council to ascertain the owners of property, and to rate them proportionately. Their lordships undertook to refer such as refused to pay to His Majesty's Courts of Justice. This extraordinary proceeding proves in a singularly clear way that local self-government, so much boasted of in these days, was not of any practical utility at that time, at all events not in Salisbury.

2. *Past Sanitary State.*—Facts to be relied upon as to the actual sanitary condition of towns, as evinced by the death-rate, even in recent times, before the Registration Act, are very difficult to get; much more difficult is it, indeed it is impossible, to ascertain them of places in ancient times, therefore any statement as regards Salisbury can be at best but approximative, compared with the accurate figures obtainable from the Registrar-General since 1837. In that wonderful book, the “Anatomy of Melancholy,” there is an allusion to Salisbury worth quoting. Burton there writes, “The worst is a thick, “cloudy, misty, foggy air, such as comes from fens, moorish grounds, “lakes, muck-hills, draughts, sinks, where any carcases or carrion “lies, or from whence any stinking, fulsome smell comes. Galen, “Avicenna, Mercurialis, new and old physicians, hold that such an “air is unwholesome, and engenders melancholy, plagues, and what “not.” After naming several towns abroad, “Salisbury with us, “Hull and Lynn” are mentioned; and he goes on to say: “But let “the site of places be as it may, how can they be excused that have a “delicious seat, or pleasant air, and all that nature can afford, and “yet, through their own nastiness, and sluttishness, immund and “sordid manner of life, suffer their air to putrefy and themselves to “be choked.” Old Burton was evidently a worshipper of Hygeia.

In the history of Salisbury, Hatcher records no less than five visitations of plague within ninety years. Whether these visits were more frequent here than in other cities over a like number of years I have no means of judging, nor of the exact nature of the disease named plague, but about the actual severity of some of the attacks there can be no doubt. A few particulars may be interesting. The first mentioned was in 1579; no details are given of this, but it appears to have been chiefly in St. Edmund's parish, for to avoid infection by passing along the infected streets to St. Edmund's church, the mayor was that year elected in St. Thomas', and some rent was remitted to the landlord of the George Hotel, belonging to

the corporation, on account of his loss of custom owing to the plague frightening away travellers. In 1604 the plague, after prevailing in London, visited Salisbury; again the election of mayor was ordered away from St. Edmund's. Of this visitation some figures are given, which prove its alarming character:—

	Deaths in 1604.	Deaths in Ordinary Years.
St. Thomas's	358	60
„ Edmund's.....	501	144
„ Martin's	293	72
Total	1,152	276

Incidentally we here meet with the average number of deaths for ordinary years—276—which, taking the population at that period to have been about 6,000, gives the high ordinary mortality of 46 in 1,000.

In 1625 great pains were taken by regulations to prevent the plague arriving, as was expected, from London, where it was raging; these means were chiefly the appointment of watchers, to prevent people from London entering the city. No goods from London were allowed to be brought within three miles of the city until three months had elapsed. Persons were appointed as searchers and examiners, and others as buriers of the dead. Oaths were administered to these people, and when they went abroad they were obliged to carry coloured staves in their hands. These regulations were continued in 1626. In November of which year, John Ivie, a goldsmith, was elected mayor; a most remarkable man, whose heroic conduct entitles him to the grateful remembrance of posterity. His conduct suggests a parallel to that of Mompesson, the Derbyshire clergyman, during the plague at Eyam, forty years later. During Ivie's mayoralty the plague broke out with great severity at Salisbury. It commenced in March, 1627, and within four days the city became almost deserted, three-fourths of the citizens having left. The clergy, having in vain endeavoured to keep the populace out of the Close, partook of the reigning panic, and fled; the church service was suspended for nearly a twelvemonth. In a pamphlet published by Ivie, a copy of which is in my possession, I find him writing: "There was none left to assist me and comfort the poor in so great a
"misery; neither recorder, justice, churchwarden, or overseer in all
"the city; nor high constable, but only the two petty constables,
"that had no friend to receive them in the country, wherefore I got
"them to stay with me, and they did prove to me a great comfort both
"by night and day." The conduct of this brave man is described at

length in the "History of Salisbury." He provided storehouses, meted out the supplies raised by the contributions of the surrounding country, put down riots, personally grappled with the ringleaders of the watchmen, when they attacked him armed with bills and staves, demanding increase of wages. Finding the alehouses crowded with the people become desperate in their fear, he even attempted the hazardous expedient of suppressing them; there were then in the city 50 inns and 80 alehouses. The latter he abolished, except one kept by John Chappel, in spite of murmurs and threats. Even this exception tended ultimately to strengthen his authority. "Four weavers, having drunk up all that was in the house, agreed to go to one Mr. Payne's, an ale brewer, and buy one cowl of ale, the price 3s. 4d.; which they did, and brought it to this Chappel's house, and set the cowl upon the table, and another empty cowl by, and made a vow that they would, before they left, drink all that was in one and put their urine in the other, which they did with speed." The result was, that the four weavers, "the master, John Chappel, his wife, and maid, were all dead within three days and a few hours." Another case is related where one Stout, and five more tailors, would, in spite of the mayor's order, "keep a feast, and in a week they were all dead of the plague save one." These anecdotes prove that whatever the particular nature of the plague, it could be brought on by drunkenness and debauchery. From these facts it is clear that an effect similar to that described by Thucydides of the plague at Athens, and by Boccaccio in his "Decameron" of that at Florence, in 1348, was produced at Salisbury, namely, the utter recklessness of despair. The buriers of the dead, and the women who were sworn in as searchers, became callous to their loathsome task, and exulted with fiendish joy over the victims. One anecdote is remarkable. In his pamphlet the mayor writes: "I found the four bearers, each having on their shoulders a thurndel pot of ale, and the woman had on her head a thurndel* pot of ale. These five were dancing among the graves, singing '*Hie, for more shoulder work,*' in a fearful manner, and when they saw me they ran away."

The deaths from plague upon this occasion, according to a manuscript chronicle of the city, were 369 from March to November. As the population of the city was probably not more than 7,000, three-fourths of whom had left, about one-fourth of the remainder must have died in the whole year 1627. It is worthy of note that a sum of 50*l.* weekly, was, *by order of the magistrates*, levied upon the county for the distressed citizens; also that the city of Bristol volunteered a valuable gift of 84*l.*, sent with a very kind note, in November, 1627. In 1665, Charles, to escape the plague then

* A thurndel, according to Skinner, in his "Etymologicon," was one-third of a gallon.

raging in London, visited Hampton Court, but thinking that too near, extended his journey to Salisbury, where the court remained during August and part of September, and then went to Oxford, the plague having followed in the royal train. The ravages, however, were then less severe than at the preceding times. No particulars are given of this visitation. In 1666, the city was more severely affected. The mayor was not elected in the city for fear of the plague, but in the Close, by virtue of a licence from the king, dated at Whitehall, 21st September. The burials for the year 1666 were 493.

In history, then, we find it recorded that the plague visited Salisbury five times in ninety years, and we obtain some figures as to the ordinary mortality for a portion of that period—about 46 in 1,000. In 1775, a census made by order of the corporation, gives a total of 6,856 inhabitants, and the deaths for seven years 30 in 1,000 per annum. It is evident that in ancient times, from the various facts related, the city of Salisbury must have been unhealthy, and in recent times, beyond dispute, that character remained applicable to it; for since the Registrar's reports have done away with all conjecture, and placed plain facts before the public, it will be found that a high rate of mortality has prevailed in Salisbury, when compared with London or the rest of the kingdom; for example, it was about 27 in 1,000, that of London being not quite 24, and of all England about 22.

There was one disease very fatal at Salisbury—consumption—as some figures will presently show, and a most frequent disorder in the city was diarrhœa. The causes may have been various, but I am inclined to think that humidity and nastiness of atmosphere produced by the canals and cesspools, and the badness of the water used for domestic purposes, were mainly the causes. I place particular stress upon the badness of the water, for the impurities therein must have entered the systems, not of water-drinkers only, but of all people, in a culinary way, and even in the beer. This beer was, in some instances, brewed with water from the dirty canals, but that obtained from the wells must have been equally bad, contaminated as it was with cesspool filth. I am not aware of any process in brewing calculated to get rid of impurities therein contained. Whatever the cause, this was evident, the very common prevalence of diarrhœa amongst residents in Salisbury, especially in some houses where the well water was very bad.

The contrary effects of good and bad water were illustrated about four years ago, in the city workhouse. This house, previously supplied from wells on the premises, when waterworks were introduced, was supplied from them. A meter being out of order, whilst it was under repair, the old wells were resorted to; diarrhœa set in

throughout the house; of 100 inmates, scarcely one escaped a severe attack;—the waterworks water being resumed, diarrhœa disappeared. I am aware that this is nothing strange, but the extent of the experiment, as it may be called, proving positively the opposite effects of good and bad water, is worth recording.

It is not for me to go into the question of what part water plays in the animal economy—whether, as Pereira, Rumford, and others believed, being decomposed, it becomes a nutritive agent by assisting in the formation of the solids. However the fact may be, it is very certain that bad water and bad health are very frequently connected.

In 1849, as is well known, during the plague of cholera, Salisbury suffered nearly as much as any city in England. From that disease nearly 200 died within two months; these deaths occurred amongst people of all classes and of all ages, although doubtless the poor, resident in confined and dirty cottages, suffered most severely. As we have before seen that the clergy fled from a plague in time past, with such conduct it is right to contrast that of the modern members of that profession in this city, of whom none were more assiduous in kind attention to the poor, visiting them at their own houses, than the late Bishop Denison. The total mortality for the year 1849 was 455, so that in that year almost a double average mortality occurred. In 1850, the mortality, as usual after a fatal epidemic, was small, only 158 persons died. Does not this show that many people who succumb to an epidemic, are those in whom, although no active disease had previously manifested itself, yet some morbid seeds must have existed, which, absent the epidemic, would have added their names to the mortuary list of the ensuing year? Besides such cases, I am aware that several known invalids died off by the cholera.

3. *Works for Drainage and Water Supply.*—Before describing these works, it will be well to give a few details of the old modes of sewerage and water supply. A systematic inspection showed that, in addition to numerous privy vaults, many of enormous size—rarely, if ever emptied—there existed hundreds of cesspools, partly into which, and partly into the canals, the sewage was conveyed by means of brick drains. From the first and second were produced the bad effects usual in all towns destitute of proper drainage, but by the third, namely, the canals, an abomination quite peculiar to Salisbury was created. The canals being near the surface of the streets, and on one side only, the brick drains, in order to enter them, were necessarily very nearly level, and when the canals had water flowing in them, the mouths of the house-drains were submerged, so that in many instances water ran into them from the canals, and in all cases their contents could not escape. Filth was thus pent up, and the stench thereof was thrown back into the premises,—for in most cases

the drains were badly or not at all trapped at their origins. All this time, when the water was flowing, nothing very unsightly appeared in the streets, and by day most people viewed the canals as *clear running streams*; but at night, a very different state of things existed. In order to give the house-drains a chance of partially emptying their contents, the water was turned off from the canals, and then the stench was unmistakeable, and the sight presented in a morning before the water was again turned on was disgusting,—luckily for the writers who celebrated the English Venice, it was seen by few,—indeed the canals were then *filthy ditches*. Moreover the current of water when running was never strong enough to cleanse the canals, whence another nuisance peculiar to Salisbury arose. Periodically men with scoops lifted the accumulated filth from the canals, and this was placed in heaps under the eyes and noses of passengers, many tons within a short distance, where it lay for hours or even days before it was carted away. The composition of this filth needed no analysis; it has already been said that numerous water-closets were connected with the canals. Sir John Harington, the inventor of those cleanly comforts, would never have suggested his “*Metamorphosis of Ajax*” (a jakes), if he could have foreseen such a perverse abuse of his invention as that of obtruding under the sight and smell in public streets those matters which were intended to be hermetically sealed from the senses. It may be mentioned, that Sir John was banished from Queen Elizabeth’s Court, for writing the witty pamphlet alluded to, in which he recommended his invention to the notice of the Queen. Sir John first brought his cleanly comfort of the water-closet into use at his residence of Kelston, near Bath.

Water Supply.—This was partly from wells and partly from the canals. The wells were shallow—6 or 7 feet deep—and the water therein was liable to contamination from the soakage of cesspools. In hundreds of instances these cesspools were but a few feet from the wells, and as they received not only the sewage and contents of water-closets, but also rain-water from the roofs and yards, after heavy rains the neighbouring wells were influenced to such a degree that the water was both coloured and stinking; indeed, in several cases, upon going round with the inspector, we found people so ignorant of good water, that from custom they had been led to the belief of the water of their wells being excellent, even when upon examination it was found actually discoloured and stinking with cesspool filth. One ludicrous anecdote may be given. Some years ago, upon a well being sunk, the water yielded by it was of such colour and taste as to lead to the mistaken notion of a mineral spring having been discovered—the truth was, a cesspool had been tapped. Such was the well water of Salisbury in general. Of the canals,

enough has been said to indicate the kind of water obtainable from them; they were, however, to many hundreds of citizens, at once a fountain and a sewer. One more grievance was chargeable upon the canals. Not being water-tight, much water oozed from them and saturated the subsoil almost to the surface; the foundations of the houses near were wet, and, by capillary attraction, their walls became more or less damp; where cellars were attempted, they became occupied by water. By measurement of the inlets and outlets of the canals, it was calculated that 1,000 gallons a minute less passed away *from*, than entered *into* the canals. The saturation of the subsoil by them was thus a fact demonstrated.

The evils then were, wet subsoil, bad sewerage, bad water. The indications of treatment were, to dry the subsoil and to provide good sewerage and water. The remedial works were of a comprehensive kind, and embraced not only the city and the Close, but extended to Fisherton, a part of the borough over the River Avon.

For drainage and sewerage, the works consist partly of brick mains and partly of circular glazed earthenware pipes. The peninsular position of the city and Close became of the greatest importance in securing good drainage. It has been already seen, in their protest, that the opponents asserted the place to be too flat for any thing different from the old mode. This assertion about flatness was made by them, not only against facts plain to the most common observation, namely, the existence of a mill with a fall of 6 or more feet, and below that mill a very rapid run of the River Avon for more than a mile round the city to some hatches at which a further fall of several feet occurs, but it was made in direct opposition to the statement furnished by a competent surveyor after careful levelling, wherein was clearly shown a fall of 15 feet existing between points of the river above and below the town, not more than 1,600 yards apart in a direct line. With the lowest level a communication was made by means of a brick main, oval in shape, 4 feet 6 inches in height, and 3 feet wide; the bottom of this at its outlet is 1 foot above the lowest summer level, 1 foot below an ordinary level of the river, and its top is rarely, if ever, covered by the highest flood; this sewer is continued into the town with a gradient of 5 feet to a mile, as far as the White Hart Hotel, where its bottom is nearly 9 feet below the roadway. As this sewer is built upon the layer of gravel before mentioned, a rapid run of water always exists therein, an artificial brook being formed. From this point two branch brick sewers are continued, rather less, being 3 feet 6 inches high, and 2 feet 4 inches wide, one along New Street and High Street to Fisherton Bridge, and the other along Catherine Street across the Market Square, and up Endless Street; the gradient of these is 8 feet 3 inches in a mile. Into these brick mains circular earthenware tubes, of sizes varying

from 15 to 9 inches diameter, convey the sewage from the various streets; these circular pipes are carefully cemented, and at their sides are drain tiles, arranged to carry off the subsoil water. The ruling gradient of these pipes is 22 feet in a mile, a fall sufficient to keep them clear by the action of ordinary house-water. As the house-drains into the canals were found badly made with bricks uncemented, and at wrong levels, they were condemned, and earthenware pipes of 6 inches and 4 inches diameter substituted, at proper inclinations.

The sewage of Fisherton is conducted into the main at Fisherton Bridge, by means of an iron tube 2 feet diameter, placed under the River Avon. In various parts, flushing wells are placed at the corners of the streets, by means of which the pipes are flushed from the hydrants when needed. Ventilation is secured by many of the rain-water pipes being connected with the house-drains.

A great effort was made to retain the canals as clear running streams, when the sewage was diverted therefrom, even by some of those persons favouring the Act, and the inspector was led to view them as ornamental; but as it was admitted that they must be made water-tight, and this involved a great outlay—moreover, it being farther pointed out that whilst they existed on one side of the streets only, to carry off storm-water, the streets necessarily sloped towards that side, often becoming concave in the middle instead of convex—their obliteration was at last decided upon, and now having been accomplished, I must plead guilty to the destruction of the city as English Venice.* The streets have since been made of a proper shape, and storm-waters run off much more rapidly and completely than by the canals.

Waterworks.—These works are situated at the north side of the city, and consist of a very neat looking engine-house, containing a pair of double cylinder or Woolf's engines, of about 25 horse-power each, which are connected to the pumps in a well within the same building. The well is 68 feet deep; at its bottom is a tunnel excavated in the chalk, 70 feet long, in an eastern direction, which serves to increase the gathering surface of the well, and the body of water to pump from. The depth of water in the well is usually 18 feet, not often reduced to less than 9 feet by the daily pumping. The water is raised from the well to a covered brick reservoir on Bishop Down Hill, a height of 146 feet. This reservoir will hold 260,000 gallons, and is placed high enough for all the houses in the city to be supplied from it. The water is distributed to the houses in iron pipes at high pressure, and this pressure is so great, that copious

* One named the New Canal still remains—it is covered over, and at a much lower level than the others; but its obliteration, I hope, will ultimately be effected.

streams of water may be thrown from the hydrants, placed at 70 yards interval over the whole of the public streets, to a great height in nearly every part of the borough; on many occasions this has been proved in the extinction of fires, indeed, it is found to render fire-engines useless. The water supply is constant during greater part of the 24 hours, and if people would be careful, and have their taps in good order, it might be quite constant night and day. The quantity raised is upwards of 500,000 gallons daily, an enormous supply for the population, which for the whole borough is little over 12,000, thus giving over 40 gallons as the average daily supply for each inhabitant, a quantity nearly double that of many other towns.

The Cost for the whole Borough was, of drainage about 13,000*l.*, of waterworks 14,000*l.*, total 27,000*l.*; which sum was borrowed on the improvement rate system, to be repaid—principal and interest—in thirty years. The special rate for this purpose varies from 1*s.* 2*d.* to 1*s.* 4*d.* in the pound per annum. It will be remembered that the enemy prophesied the probable cost of inefficient works would be at least 5*s.* in the pound. This is the cost of public works contributed by all ratepayers (the rate named “general district rate,” is mainly in place of the old “way rate,” and does not quite equal the old rate): for supply of water there is an additional charge of 6*d.* in the pound, a mere trifle, for the advantages secured in good water, and saving of pumping and labour. It may here be specially noted, that hitherto the Local Board of Salisbury have sold, or rather almost given away, water for commercial purposes at only 8*d.* for 1,000 gallons; the serious injustice thus done to the body of ratepayers is glaring, when it is seen that 1*s.* 6*d.* and 2*s.* per 1,000 for like quantities is charged in several towns, even where the water is obtained by descent from hill reservoirs, and not by means of expensive pumping machinery, as at Salisbury. If the authorities were to charge a fair price for all the water sold for commercial purposes, very shortly the sixpenny supply rate would be reduced by one-half, and ultimately become nearly, if not quite annihilated.

The Quality of the Water from the well is excellent, it is very clear, colourless, of pleasant flavour, and may be called soft, when compared with other well water, or even with river water. Two analyses of this water, made at an interval of two years, give respectively, 12 grains and 8 grains of carbonate of lime, and a quarter of a grain and 2 grains of sulphate of lime to a gallon. This hardness of 10 or 12 degrees is very small, for that of eight old Salisbury wells, given in Mr. Rammel’s report, from the analysis of Dr. Lyon Playfair, varied from 17½ to 45 degrees; and of 264 wells and springs, according to a report of the General Board of Health, the average hardness was 25·86. The water of the Salisbury well is not half as

hard as that of the average of wells, and much softer than that of rivers, *e.g.*, of the Avon, which is $18\frac{1}{2}$ degrees. There is no organic matter mentioned in the analysis, and no animalculæ are discoverable upon repeated examinations under a powerful microscope.

The works for drainage and water supply were planned by Mr. Rammel, C.E., who had inspected and reported upon the city, and carried out by Messrs. Parnell, of Rugby, under the superintendence of Mr. Botham, C.E., the present city surveyor.

When the canals were destroyed, and the roads re-constructed, most of the footways were paved with Caithness stone, at a cost of 3,000*l.*, to be repaid—principal and interest—in thirty years; this well illustrates the superiority of the modern mode over the old one of borrowing money for the same purpose. Forty years ago the pavement was done and paid for by bonds at 4 and 5 per cent.; that pavement is worn out, but the bonds are not—for ever requiring a 3*d.* rate for interest; whereas by the new mode, the pavement will probably wear after the debt is cancelled.

4. *Present Condition of the City.*—First, as to changes evident to the senses. Instead of dirty canals with dirty streets sloping towards them, the streets are now rounded in the centres and clean,—the foot pavement equal to that of any town in England, instead of being uneven and full of holes,—neither the eye by day, nor the nose by night, is now offended, as of old; the whole atmosphere is changed—dry, instead of moist; sweet, instead of stinking; drainage and good sewerage, and very dry subsoil, in place of a saturated subsoil and bad sewerage; plentiful supply of good water, available without labour, in place of a bad supply of bad water, with labour of pumping, or of carrying from the channels. Dry underground cellars can now be made. It may be remarked that the opponents of drainage, on account of its supposed impracticableness, were non-plused at an early stage of the operations; for when the main sewer had advanced only a short distance into the city, quickly, one after another, many wells became dry in the Close and New Street, some hundreds of yards from the drain. This *experimentum crucis* staggered the enemy, and a builder became such a convert that, in New Street, where he was about erecting some houses, he made cellars of considerable depth, which, for more than nine years, have continued quite dry. New Street is in the flat part of the city. Many other cellars have been made in various parts; the cellar floors are several feet below the old water level in the subsoil. It may be stated, that the subsoil water has been lowered, on an average, 4 or 5 feet over the city. So much dry ground additional having been gained—*perfectly dry* since the canals have been destroyed. My own cellar is a good example of the perfectness of the change; it is in the Close, between the cathedral and Avon, a few feet below the natural level

of the ground, and in winter always had in it water from a few inches to more than 3 feet deep. Since drainage, the floor has been constantly dry. Nowhere is the beneficial change more evident than in the cathedral, where the subsoil water was used to lie close to, and sometimes actually rise above the floor ; since drainage no such thing has occurred, and the whole atmosphere within the building is improved.

These changes are facts evident to the senses of all observers, and, irrespectively of any improvements in sanitary matters, I venture to state, that such changes in this city are well worth all the money expended, on the grounds of cleanliness, comfort, decency, saving of labour, and security against fire. But improvements have occurred in sanitary matters, and to these I propose to call the most serious attention of all sanitary reformers, and that term, I trust, will soon become synonymous with all thinking people.

Since drainage, in nine years, the population being of much the same average, 531 less people have died than in nine years before drainage, *excluding* the cholera year ; that is, instead of 4 only 3. I do not propose to enter minutely into the causes of death assigned, and for various reasons, one of which is the uncertainty of any very accurate deductions therefrom ; for, in many instances, different medical men would put different names as the cause of death in similar cases. Moreover, there is by far too much of fashion, ever changeable, in medical nomenclature, many similar diseases being called by different names in succeeding generations ; but deaths are facts, and to their numbers I will chiefly confine my remarks. I will first show a comparison of *births* and *deaths* over two series of nine years before and after drainage, excluding the cholera of the year 1849 :—

	Before Drainage.	After Drainage.
<i>Nine Years—</i>		
Births	2,470	2,624
Deaths.....	2,226	1,695
Majority of births	244	929

The following table will show the total numbers of deaths in each of nine consecutive years before and after drainage, the years end upon 30th *June*, so that the cholera cases of 1849 are excluded. I will place the deaths in order of the highest numbers first, and contrast them in the two periods :—

Year.	Deaths before Drainage.	Year.	Deaths since Drainage.	Yearly Decrease.
1841	230	1856.....	182	48
'42	268	'57.....	194	74
'43	284	'58.....	213	71
'44	251	'59.....	200	51
'45	216	'60.....	201	15
1846	200	1861.....	132	68
'47	321	'62.....	230	91
'48	220	'63.....	192	28
'49	236	'64.....	151	85
Total	2,226	Total	1,695	531

The average annual mortality before drainage was about 27 in 1,000; for the nine years since drainage, 20 in 1,000. In excluding the cholera cases from this table, many persons, who believe that disease to have been peculiarly the result of removable causes, will think it extenuating the mortality before drainage; but as the inclusion of those cases would to others appear as a wish to aggravate the case, I have thought it better to treat the cholera as exceptional, and to deal in my comparison only with the ordinary mortality, in which the contrast before and after drainage is quite sufficiently remarkable.

It will be seen from this table that the highest rate of mortality since drainage is but two-thirds of the highest rate before, and itself below the old average. But *when* did that highest rate occur? In a year when epidemics were rife in the district, scarlatina, measles, and hooping cough were very fatal in the Wiltshire villages, and co-existed in Salisbury, yet its mortality did not reach even to its old average. It will further be observed, that the lowest rate of mortality, 132, is below the lowest rate of any year before drainage by more than one-third; and, when compared with the whole kingdom, is astonishing, namely, only 14 in 1,000, against an average for towns of 25 and for the kingdom of 22. It must be remarked that Salisbury city district consists of a population purely *urban*, whilst most country town registration districts include more or less suburban or rural portions. Furthermore, and the fact ought to be particularly noted, Salisbury in its population greatly lacks that element of wealthy residents so plentifully possessed by Bath, Cheltenham, Brighton, &c. Also, Salisbury having numerous small charities for the poor, this class is induced to linger about in expectation of them, and numerous *old* people are attracted to the city by them, who otherwise would have gone and remained elsewhere. Again, Salisbury not being a manufacturing town, numerous people emigrate there-

from in search of employment at the most healthy periods of life. Thus Salisbury is deficient in the wealthy* class, and abounds in the *elder* poor class, and in *young* children at the most precarious ages. Therefore, comparing like things with like, the case, as shown by the previous figures, is much more in favour of the salubrity of Salisbury than even at first sight appears. It would be unfair to require comparison with the towns before named, and with the Belgravian and other fashionable quarters of London; but such comparison can be ventured upon, and for several years past Salisbury will come out the victor.

Although it is not my intention to enter into details as to the assigned causes of all the deaths, I will give a few particulars regarding some.

Zymotic diseases killed 247 people in seven years, before drainage, or 3·88 in 1,000 per annum, *cholera cases being excluded*; in seven years, since drainage, zymotic diseases killed only 172, or 2·73 in 1,000, as an annual average. The zymotic deaths in the whole kingdom being at the rate of 4·45 in 1,000 per annum, a comparison therewith is very much in favour of Salisbury. Whilst 1 in 219 annually dies elsewhere, only 1 in 367 dies from that class of diseases in Salisbury.

Of these zymotic diseases, typhus fever, which commits such ravages throughout the kingdom, can scarcely be said to have occurred as a cause of death in Salisbury, in several years not at all. In the year 1862, out of 623 registration districts in England and Wales, only six were quite free from typhus; and of these, Salisbury was the only city, the others were small county districts. In seven years since drainage, 1857-63, only 12 cases of fatal non-eruptive fever has been registered, including typhus, typhoid, and infantile; in seven years before drainage, 1844-50, of those diseases 54 fatal cases occurred. As an annual average for all England, 1 in 1,071 of population dies from typhus and typhoid fevers; in Salisbury only 1 in 5,262. Of diarrhoea, in the last seven years, only 12 fatal cases have occurred, and of these 10 were children of and under 6 months old. In the seven years diphtheria is mentioned only four times by itself, and twice in conjunction with other causes of death. Denti-tion produced 31 deaths in place of 62 in the former set of seven years. Since drainage a great change has taken place in the number of deaths from the allied tubercular diseases, phthisis, tabes mesenterica, and hydrocephalus, as the annexed table will show:—

* In this allusion to the *wealthy* class, let me not be misunderstood to mean that such class is longer lived *on account of wealth*; but inasmuch as wealthy people occupy larger houses and better ventilated than poor people do, on that account they have the advantage in sanitary estimates.

	Phthisis.	Tabes Mesenterica.	Hydrocephalus.
Before drainage, 1844-50 ...	286	32	30
Since ,, '57-63 ...	143	17	10
Diminution	143	15	20

This diminution in a class of diseases admitted to be intimately connected with dirty and moist atmosphere, is remarkable. For comparison, a few facts as to the past and present general statistics of that scourge of England, consumption, may be interesting. In the beginning of this century, one-fourth of the whole number of deaths was put down to it. Inglis, in his book on the Channel Islands, as lately as thirty years ago, makes the following remarks: "Of deaths from all causes, there die of phthisis, in London 25 per cent.; in France, 23 per cent.; at St. Petersburg, 17 per cent.; at New York, 17 per cent.; in Switzerland, Austria, Prussia, and Belgium, the mortality is not materially different from that in England, *i.e.*, 25 per cent., which seems to be its maximum mortality." Although, doubtless, obtained from the best available sources, these figures cannot be so accurate for England as those since obtainable from the Registrar-General's reports. One of those reports, quoted in the "Penny Cyclopædia" in 1840, placed the proportion of phthisical at 19.55 per cent., or one-fifth of the whole number of deaths. This proportion during the last twenty years has much altered for the better; according to the Registrar's reports for some years past, about one-eighth instead of one-fifth of all the deaths are put down to phthisis. Some of this change may be owing to alteration of nomenclature, and nicer discrimination in diagnosis. At Salisbury, for the last *seven* years, about one-tenth of the deaths have been from phthisis; for the last three years, only one-thirteenth; and for the year 1863, only 11 deaths occurred from phthisis, or 1 in 818 of population, the proportion for London having been 1 in 363, and for all England 1 in 374. The average age at which the 143 deaths from phthisis occurred during the last seven years, was 34.8 years. The comparative number of deaths of children in Salisbury will be seen in the following table:—

Deaths of Children in Proportion to the Whole Mortality.

	In 1,000 Deaths.	
	Under 1 Year.	Under 5 Years.
All England	232	408
Lancashire	252	473
London	207	424
Salisbury { before drainage	161	354
{ since ,, 	193	337

The actual number of deaths of children appear in the next table:—

	Seven Years before Drainage, 1838-44.		Seven Years Since Drainage, 1857-63.
Under 1 year	280	Under 1 year	253
„ 2 years.....	131	„ 2 years	91
„ 3 „	95	„ 3 „	62
„ 4 „	44	„ 4 „	30
„ 5 „	36	„ 5 „	22
Total under 5 years	586	Total under 5 years	458

It will be seen from these tables that, although the actual number of children's deaths is decreased since drainage, the decrease is not so great in ratio as of the whole mortality, or of some particular diseases as before described, whilst the *proportion* of deaths under 1 year old to the whole number is greater. This fully bears out what I have always imagined, that the deaths of very young children will be numerous in spite of public sanitary reform; the true remedy must be looked for in parental management, the improvement of which, I venture to suggest, will be brought about by education, and that domestic more than scholastic.

The Close of Salisbury, with a population not varying much over a long series of years, presents the following facts as to mortality. For many years, as shown in Mr. Rammel's report, that mortality was at the rate of nearly 20 in 1,000; for the last *nine* years, since drainage, it has been only about 14 in 1,000, thus showing a death-rate lower than that of the Isle of Wight, which is 17; of Cumberland, Westmoreland, and other rural districts, the most healthy in the kingdom; for the death-rate of seventy of the districts, selected as the most healthy in England, is 17 in 1,000. Only a portion of Fisherton parish being in the borough, figures as to its mortality would be with difficulty obtained, and inferences therefrom would be quite valueless for various reasons. Since the railways have concentrated there, for a few years past, its population has suddenly increased so much that comparisons with former periods would be impossible. For instance, that population in 1851 was 1,905, in 1861, 2,424. Moreover, there are in Fisherton a large lunatic asylum, containing nearly 500 inmates from all parts of the kingdom; also the county gaol and general hospital; all these circumstances make any useful sanitary deductions as to Fisherton out of the question. Such deductions would be as valueless as those given from time to time from the various watering-places, which appear to me worse than useless, for they produce only confusion in the minds of

readers, and tend to divert attention from true statistics of other places, the true being liable to become mixed up with the merely conjectural; thus a serious damage may result to the cause of sanitary reform.

There is yet one other benefit directly traceable to the drainage in Salisbury—the formation of a museum—which happened in this way. In the excavations for the sewers numerous articles were found; ancient cutlery, spoons, arrow heads, pilgrims' signs, tradesmen's tokens, rings, &c. These were found chiefly in the middle of the streets, evidently in the beds of the old rivulets. They were collected by a gentleman who since left the city, and, at his sale, were bought by myself and a few others, to form the nucleus of a local museum. A letter was put by me in the "Journal," asking "Why shall Salisbury not have a Museum?" The late Dr. Fowler, then 95 years old (I believe one of the first members of the British Association), immediately called upon me, and offered to co-operate; and ultimately he and Mrs. Fowler furnished the chief part of the funds to purchase and adapt a building for the purpose. This has been done, and a very considerable museum already exists.

I have now given what I undertook, a statement—I trust an intelligible one—of the alterations at Salisbury, done under the Public Health Act. In doing so, I have endeavoured to be liberal in facts, sparing in opinions. The great fact of 531 deaths, that is, nearly one-fourth of the whole number, having occurred over one period of nine years less than over another like consecutive period of years, naturally suggests the question, Did anything unusual happen between these periods? The answer has just been given. The next question is, Did the thing done *cause* the difference of mortality? In answering this question, I particularly wish to guard against dogmatically asserting the *post hoc* to have been wholly *propter hoc*. I do not claim that drainage and waterworks saved all the 531 lives, being quite aware that so many concomitant physical and moral causes exist to produce effects upon vitality—so many ways to the gates of death—that to make such claim would be as rash as to put the hand upon each of 531 persons and say, you and you were saved. But, holding the strong opinions which I do about the fostering causes of many diseases being removable, and seeing what I do see in Salisbury, it would be affectation on my part not to say that I believe the works done to have been one cause, and that the main cause, of the diminution of mortality; and although it may be objected that assertion is easy, proof difficult, in vital statistics; in this case, I do not think it would be easy, if possible, to suggest another even plausible cause of such a great alteration having continued for so many as nine years. The diminution of consumption certainly appears to be a demonstrated effect from an evident cause:

I look upon many of the figures derivable from Salisbury as peculiarly valuable in statistics, because the population is *urban* only, and varied little in numbers over a long period of years ; also, because the bulk of it is stationary over the various months of the year.

5. *It remains for me to make a few General Remarks.*—My first is, to caution people against expecting too much from sanitary reform. I have heard it said during the present summer, “ We shall have no “ cholera now, owing to the drainage.” This is being more sanguine than I have ever been ; for, even if sanitary arrangements *could* entirely prevent it, that they ever will be so complete as to do so, I fear it is quite utopian to expect. My belief about cholera and other epidemics is, that their primary causes are atmospheric, and quite independent of human influences ; that they may be ubiquitous, and, when not so, do prevail over a large extent of country at one time, or pass in determinate currents in quick succession. Whether such primary causes consist of a variable state of caloric, of electricity, or quantity of ozone, or other agent never yet thought of, as seeds of disease they become everywhere sown, and yield fruit where they find fostering circumstances favourable to their development ; that such fostering causes in the case of cholera were proved to exist in dirty, badly-drained towns, and eminently in the most confined and dirty parts ; and further, I believe that in so far as these circumstances are removable, and are removed, the chances of cholera attacking, or if attacking, of killing, human beings, is lessened. When it shall have been discovered exactly what special causes determine whether an epidemic shall be in form of influenza, scarlatina, or cholera, the question of the entire prevention of their future occurrence may be discussed ; but at present conjecture as to them only exists, and I fear, should the causes ever become known, they will be found to be produced upon such a grand scale, that operations of the human laboratory will never be comprehensive enough to prevent such production being carried on in the laboratory of the atmosphere. Practically, then, we must be content to prevent, as much as possible, their deadly effects, by the removal of those fostering conditions which observation proves to be friendly, if not necessary, to their fatal development. For that purpose, I believe all known sanitary measures, cleanliness, ventilation, drainage, and good water supply, ought to be everywhere adopted.

There is another subject upon which I think many people have unreasonable expectations from sanitary reform, that is, the point to which the average annual mortality can be reduced. In one of the pamphlets printed during the drainage contest, I held out a prospect that, in case of drainage and waterworks being adopted, the mortality of Salisbury, instead of 27 in 1,000, would probably be one-third less. I am happy to find that such hope has been realized, for

the average of five out of the nine years since drainage, the mortality has been exactly one-third less, or 18 per annum in 1,000; but when I see 10 in 1,000 mentioned by some writers as an attainable minimum, I own not being sanguine enough to look for such a low figure in large populations over periods of years. Such a calculation is arrived at by excluding deaths from zymotic diseases, as in *all cases preventible*, which in practice is a perfection scarcely to be expected. Moreover, mental and other causes of disease appear to increase as civilization advances, and will in no small ratio counteract the good done by sanitary reformers, who can deal chiefly with mere physical causes, and with only some of these, for diet and clothing are beyond their control, although possibly lodgings may not always be.

There is a class of persons, including some medical men, who hold that atmospheric stench from cesspools, privies, &c., do not produce disease, but that poverty is the true cause of the diseases alleged by sanitary reformers to be so produced. Now, as poverty and bad air arising from the sources named so often co-exist, this argument possesses a plausibility which requires the most careful collation of facts, in order to refute its dangerous tendency as regards all practical sanitary measures. Allowing poverty, as such, to be one predisposing cause of disease, I believe that it is infinitesimal when compared with bad air and uncleanness, and that these, with bad water, are mainly the producers of that state of body which renders people a prey to epidemics, whatever the primary causes of such epidemics may be. Further, I believe that were these things found as often to co-exist with the rich as with the poor, the rich and poor would be almost equally subject to fatal attacks of epidemics, *e.g.*, of cholera, which equality of attack amongst similar numbers certainly did not occur. Of 100,000 inhabitants of the west of London, and 100,000 in the east thereof, in 1849, the former suffered little in comparison with the latter; but this difference was not on account of the poverty of the latter. I believe that, if the 100,000 people had changed places, the rich would have suffered nearly if not quite as much in the east, and the poor have escaped in Belgravia as much as the rich did. This view is very far from imaginary, for its accuracy was fully borne out by facts, which happened to my own knowledge in Salisbury as regards cholera. A large proportion of fatal cases occurred amongst well-to-do people: there died one physician and several tradesmen. In localities where the fostering causes most abounded, rich and poor suffered pretty equally, as on the southern side of the Thames in London, and in other places. The Registrar-General's last quarterly report proves with singular force the correctness of this view of poverty, *per se*, not being chargeable with epidemic fatality. The writer remarks, "It is a singular circumstance that the mortality often augments

“with the increased prosperity of a district;” and he gives a remarkable illustration from the Ulverston district in Lancashire. The mortality at Dalton, in that district, for the last two quarters, was at the rate of 42 and 31 in 1,000 per annum; and the spectacle there presented was, “work plentiful, wages good, provisions cheap,” with the prevalence of “destructive epidemics.” He goes on to say, “impure water, impure air, their own exhalations, kill men, women, and children on the spot, and breed the leaven which devastates the towns and valleys in the vicinity.”

The most determined sceptic about filth producing disease, has never yet gone the length of asserting that cleanliness causes disease, nor of suggesting a suspicion of its doing so. It then follows that, apart from sanitary considerations, as cleanliness is desirable for comfort and decency, it ought to be secured by all possible means. Thus it is a duty incumbent upon all those who do not believe in dirt producing disease, to drain their towns and to provide good water, on account of comfort and decency, whilst upon those who do believe dirt and bad water productive of disease, such duty becomes doubly incumbent.

The pollution of rivers by the sewage of towns is just now a very favourite topic of complaint, and rightly so in many, perhaps in most cases; but there is a danger of legislation upon the subject being made too general and sweeping. That many rivers are polluted injuriously to decency, if not to public health, is undoubtedly true, but that all rivers into which town sewage is conducted either are, or are likely to become, offensive to the public health, or even to that of the fishes which inhabit them, is not true. Where a large town is drained into a small river, as the Rea at Birmingham, or even into a large river, comparatively small with the town, as the Thames at London, a nuisance, doubtless, is created, and ought to be rectified; but where a small town is drained into a tolerably large and rapid river—that river not being a tidal one, especially when the outlet of the drain is at a good distance from the town, as in the Avon at Salisbury—no nuisance, present or prospective, is indicated—the public are in no way annoyed, and as for the fishes* they flourish exceedingly; for it is a remarkable fact, that enormous trout—the largest in the river—have been taken at and just below the outlet of the main drain; in which drain, as before shown, a considerable flow of subsoil water always exists. Any act of the legislature, then, compelling the diversion of the sewage of Salisbury

* Three hundred years ago Palladio wrote about the great common sewer of Rome. “Upon measuring I have found it to be 16 feet diameter. Into this all other sewers of the city do empty themselves, which is the reason that sturgeons taken between the Senatorian and Sublician bridges are better than others, feeding on the filth coming out of this great sewer.”

from the Avon, into which it is now harmlessly flowing, would be a very unnecessary interference, and productive of great inconvenience and cost. Of course, at a future day, if any ready way of collecting the sewage and of selling it should be found out, applicable to the locality, such diversion might be desirable as an act of municipal economy. In the meanwhile, the neighbourhood below Salisbury is not only not injured, but enormously benefited, inasmuch as the whole of the Avon water is used to irrigate meadows within a few miles below the city.

In conclusion, as regards the true position occupied by *hygiène*, or sanitary reform, I believe that the mortality and sickness of this country, I may add, of all countries, are excessive in proportion to what they might be, were sanitary measures generally adopted. If only half, or even a smaller part of such excessive disease and death can be prevented, sanitary reformers will have done more good for their fellow beings than the combined efforts of all medical men have achieved merely by means of drugs; for, however admirable it may be to combat and subdue diseases by medicines, there can be no doubt, but that to prevent many cases of disease occurring at all, and to modify others, with all their accompanying miseries, will be of much more benefit to mankind. For if it be desirable to prolong life, which few will deny, it is equally desirable to make life enjoyable by removing many ascertained evils which do not necessarily belong to it. Let me not be misunderstood. In saying this, I have no intention of decrying the immense utility of curative medicine, but of asserting, and fixing attention upon, the vast importance of *hygiène*; *this* dealing with whole communities, *that* administering only to individuals. Besides, the proverb, "Prevention is better than cure," in sustentation of my remarks, I can plead the following from Lord Bacon, in the dedication to "Posteritie" of his "History of Life and Death, or of the Prolongation of Life:"—"For we have Hope and wish that it may conduce to a common good, and that the nobler sort of Physicians will advance their thoughts, and not employ their times wholly in the sordidness of cures; neither bee Honoured for necessitie only. But that they will become Coadjutors and Instruments of the Divine Omnipotence and Clemencie, in prolonging and renewing the Life of Man; especially seeing we prescribe it to be done by Safe, and Convenient, and Civil ways, though hitherto unassayed."

There is yet one other class of objectors to sanitary reform, the fatalists; who, if not numerous, are most dangerous, because they work upon men's religious fears by representing cholera and other epidemics as judgments, and by more than insinuating that attempting preventive measures is flying in the face of Providence. To such objectors, I say boldly, that not to attempt the removal of now well-

known fostering causes of many epidemics, bad air, bad water, &c., but to stand by and attribute the diseases to fate, would be as heinous a crime in the sight of man or man's Creator, as to stand by and see a man drowning, without attempting to pull him out of the water. To all such fatalists I would say, "Become sanitary reformers;" for, in the words of Bacon, you will then be "Coadjutours and Instruments of the Divine Omnipotence and "Clemencie, in prolonging and renewing the Life of Man."

On the NUMBER, OCCUPATION, and STATUS of FOREIGNERS in ENGLAND. By LEONE LEVI, ESQ., F.S.A., F.S.S., of Lincoln's Inn, Barrister-at-Law, Doctor of Economic Science of the University of Tübingen, Professor of the Principles and Practice of Commerce in King's College, London.

[Read before Section (F) of the British Association, at Bath, September, 1864.]

ONE of the most prominent features of European society at the present time, is the blending of citizenship, the approaching of States, and the almost total annihilation of distances. Railways, steam communication, and telegraphs, and last, but not least, the abolition of passports, have succeeded in bringing nations together, and a close intimacy has been formed between the inhabitants of the European States, which is constantly being cemented by bonds of interest, bonds of family relationship, and bonds, too, of common aspirations, and common struggles after progress and advancement. As far as England is concerned, she is no longer circumscribed within the borders of this sea-girt isle. Above and below the mighty deep, body and mind now constantly cross and recross; and our thoughts, feelings, and manners are moulded and formed by the thoughts, feelings, and manners of other countries. A strong current of reciprocal influence thus runs through the whole range of European society, and religion, literature, commerce, politics, are all more or less affected by the enlarged and liberal sentiment which such a commerce of ideas inspires. Viewed from this aspect, a special interest attaches to the flux and reflux of foreigners in different countries, and it is gratifying to find that the Census of England and Wales for 1861 is fuller in information upon this subject than any previous one. Another evidence of that care and ability which are observable in the whole of this national survey, carried on under the guidance of our learned President Dr. Farr, and his worthy coadjutors. It appears, then, from this document, that on the night of the 7th April, 1861, there were in England and Wales 84,090 foreigners,* meaning by it persons born out of the United Kingdom, in a total population of 20,006,224, or in the proportion of 0·41 foreigner for every 100 native-born subjects; or that, in other words, there were in this country 261 British subjects for

* The number of foreigners in Ireland was 8,267, and in Scotland 3,969; making an aggregate for the United Kingdom of 96,326.

every foreigner. This proportion is considerably less than in France and in the United States. In France, in 1861, there were 506,381 foreigners in a population of 37,386,313, or 1·35 foreigners for every 100 French subjects; or, in other words, there were 73 French born for every one foreigner. In the United States, in 1860, there were 4,136,175 foreigners in a population of 27,489,461, or 15 foreigners to every 100 American citizens; in other words, there were in the United States only 6·64 American born to every foreigner. In Spain, on the contrary, it appears, from the Census of 1860, just published, that there were only 34,912 foreigners, viz., 20,883 residents and 14,029 in transit, meaning probably naturalized and not naturalized, in a population of 15,638,569, or in the proportion of 0·22 foreigner for every 100 Spaniards, or that there were 447 Spaniards to every foreigner, being about half of the proportion between native and foreign subjects in this country.

Notwithstanding all the facilities of communication recently opened between this and other countries, and our increased commercial and social intercourse with almost every country in the world, it is a singular fact that France has three times the number of foreigners as there are in England. The central position of France, her easy and graceful language, the similarity of her climate to that of other continental countries, and more especially the absence of the dreaded Channel, all render France much more attractive to foreigners than this country. In the United Kingdom foreigners are birds of passage, for purposes of trade only. In France they remain for instruction, for amusement, and for agreeable society. The United States of America have been, till the present time, the El Dorado, the Land of Promise, to the industrious of all countries. We cannot, therefore, wonder at the large number of foreigners in that country. Even now, the lovers of adventure find the United States a most propitious soil where to exercise their skill. It is possible, however, that the excessive number of foreigners may be one of the causes of instability in the American institutions. With a population constantly shifting, consisting for the most part of foreign adventurers, we can scarcely expect to find the national principle vigorously at work. The United States of America, originally peopled by Europeans, and constantly fed by the surplus population of every country, is not a nation, but a cosmopolite body of men living together under republican institutions. So long as common interest bound them together they lived at peace; immediately as opposing interests disjoined them, they manifested all the hatred and passions of men alien to one another in race and nationality, and prompted by no other principle than that of sordid gain or love of conquest. As for Spain, the paucity of her industries, the absence of internal security, and, above all, her intollerant policy as regards religion, are

sufficient reasons why she should have so few foreigners. Spain may do much to rise once more in the scale of nations and to improve her economical condition. But she may be quite sure that the most luxuriating land, the most delightful climate, and the most inviting field for industry, will fail to attract strangers, where the most prized of all privileges, liberty of conscience, is denied. Let us be thankful that England offers in this respect the most exemplary liberality.

Whilst considering the influence of foreigners in this country, we are naturally led to consider the influence exercised by Englishmen in foreign countries. If we except the United States of America, where there were upwards of 2,000,000 British, the number of Englishmen in all other countries is 68,000, or less than the number of foreigners in this country. In comparing, however, the relative influence resulting from personal intercourse, not only the number but the language, national character, and rank of the individuals must be taken into account. It will be admitted, for instance, that French is a language much more extensively known than any other. Moreover, the sociability and frankness which distinguish continental nations, are more favourable to influence than the reserve and exclusiveness which form the substratum of the English character. But when we take rank into consideration the influence of the English is greater far than that of other nations. British travellers or residents abroad belong either to the aristocratic or to the mercantile classes. Few of the lower classes travel to foreign countries, and fewer still of British workmen ever think of crossing the Channel. But for our sailors, continental nations seldom see any but wealthy specimens of British nationality. Very different it is with foreign countries. There the higher classes generally remain at home, and it is principally the politician, the artist, and the merchant that move abroad. Though few comparatively in any one place or country, English influence abroad is great, especially among the educated and the governing classes.

And whom are we attracting to our shores? Of the 84,000 foreigners in England and Wales, 73,500 were Europeans, 9,500 Americans, 500 Africans, and 500 between Asiatics and natives of other countries not specified; and if to these we add the British colonists, which include men of so many races and colours, the mixture is indeed very remarkable. It is something agreeable when walking the streets of the Metropolis, to be constantly arrested, not only by the most discordant sounds of many tongues, but by the variety of costume, such as Chinese and Hindoos, Greek and Turk, Arab or Persian, often very gorgeous and bizarre. Amongst the Europeans, the Germans are certainly the most numerous. Of 73,000 Europeans more than 30,000 came from Germany, 13,000 from France, 5,500 from Holland, 4,500 from Italy, 5,000 from

Norway and Sweden, 5,000 from Russia and Poland, 2,000 from Spain and Portugal, 2,000 from Belgium, 2,500 from Denmark, and about 1,000 from Greece and Turkey. In France, the greatest number of foreigners consisted of Europeans. Of 506,381 foreigners, 205,000 were Belgians, 85,000 Germans, 76,000 Italians, 35,000 Spaniards, and 35,000 Swiss, 26,000 English, 13,000 Dutch, and the rest of other nations. In the United States of America, of 4,136,000 foreigners, 2,200,000 were British and Irish, 1,300,000 Germans, 250,000 British Americans, 110,000 French, 53,000 Swiss, 44,000 Norwegians, 35,000 Chinese, 28,000 Dutch, 27,000 Mexicans, and the rest of other nations.

As might be expected, the greater part of the foreigners in England are dwelling in the large shipping and manufacturing towns, such as London, Liverpool, Manchester, Birmingham, Newcastle-upon-Tyne, Tynemouth, Sunderland, Hartlepool, &c. It is the commercial, and not the agricultural, counties which mostly attract foreigners. London has, however, the largest number of foreigners. Fully one-half of all the foreigners in England are in London, and they are scattered in all her districts, in the most populous as well as in the most aristocratic. Fancy a single town possessing 2,500,000 English, 100,000 Irish, 36,000 Scotch, 15,000 colonists, 20,000 Welsh, and 40,000 foreigners. It is really a wonderful combination of nationalities. But what are 40,000 foreigners to a population of 2,800,000? only 1·42 per cent.; or, in other words, 70 native subjects to 1 foreigner. Compare it with New York. In 1860 there were there 813,669 inhabitants, and of these 429,952 were natives, and 383,717 foreigners, that is, 47 per cent. of the total population were foreigners, the natives being only 2 to 1 of the foreigners. In Paris (Département de la Seine) there were 94,658 foreigners in a population of 1,953,660, or in the proportion of 4·84 foreigners for every 100 natives, giving 20 natives for every 1 foreigner. It must be remarked, as regards the foreigners in England, especially the Europeans, that those who come to this country are not all of one sex, but they consist of men, women, and children. Of the 84,000 foreigners in England and Wales, about 57,000 were males and 27,000 females; whilst of 73,000 Europeans, 13,000 were under 20 years of age. Let us not fancy, however, that they are all organ boys. They comprise upwards of 4,000 children at home, 1,500 boys and girls at school, 3,000 boys in merchant vessels, and not quite 500 musicians.

An analysis of the occupation of foreigners is interesting. Very few can afford to live in England idle. This is a place for work, and foreigners are not an exception to the general rule. There is plenty, however, for them to do. Many industries are in the hands of foreigners. A good number of them, about 1,500, for instance, are

employed in sugar refining. This industry is itself of German extraction, and the Germans are still the best workmen in White-chapel. Watch making and clock making also employ about 1,200 foreigners. Great many opticians and spectacle makers are foreigners. There are a large number of foreign tailors and shoemakers, of milliners and dressmakers. Upwards of 1,000 foreign bakers are to be found in this country. The figure and image makers are almost exclusively Italians. 1,400 governesses and some 3,000 domestic servants, principally females, are Swiss, French, or German. It is by German, French, and Italian teachers that the foreign languages are taught in the schools. Foreign musicians are numerous. To them is England indebted for the impulse given of late to the cultivation of music in this country, not only in theatres and public exhibitions, but in the drawing-room and family circle; and a large number of our seamen, nearly 16,000, are now foreign born. Up to a very recent time the navigation laws absolutely prohibited the use of foreign seamen in the manning of our ships. But since the restriction was abandoned, by the 16 and 17 Vict., cap. 131, and 17 and 18 Vict., cap. 120, the increase of trade and navigation has been such, that not only has there been ample employment for our ships and seamen, but we have been able to employ a large number of foreign ships and foreign seamen. There were, moreover, in this country, among foreigners, 127 Roman Catholic priests, 96 physicians, 109 interpreters, 15 advocates or barristers, and 14 solicitors and notaries, 164 diplomatic and consular officers, 287 artists, 68 sculptors, 82 engravers, 250 cooks, 1,600 merchants and bankers, and 3,000 more, between commercial clerks, travellers and brokers. Even in house-building there were many foreigners employed; and so in a hundred other occupations. It is gratifying to know that in the United Kingdom the whole field of industry is open alike to foreigners as to native-born subjects.

We have in such facts as these abundant evidence that the foreigners residing in this country are mostly, if not all, useful members of society, active labourers in this great workshop of the world. And though there may be a few political refugees—*hommes de lettres*, loungers in news-rooms or Leicester Square—they must be very few indeed, and even they must obtain a livelihood in some manner by their writing or otherwise. It is gratifying, indeed, to think that foreigners are not a burden to the country. It was suggested on one occasion that Lord Holt had laid down that they were not even entitled to relief, and that they might be left to starve. But Lord Ellenborough denied that Lord Holt ever uttered such a sentiment. “The law of humanity,” he said, “which is anterior to all positive laws, obliges us to afford them relief to save them from starving.” It is very rare, however, that a foreigner enters a

workhouse. In the prisons they are to be found in a fair proportion. In an average there are about 1,700 foreign prisoners to a total of about 120,000, or in the proportion of 70 British to 1 foreigner. Among those guilty of murder there is a limited number of foreigners. Of 92 persons who suffered the penalty of death, from 1857 to 1863, 6 were foreigners—3 Spaniards, 2 Greeks, and 1 Italian. Recently as many as 5 South Americans were executed for murder and piracy at sea, and a most heinous murder in the railway is supposed to have been committed by a German.

That the free admission of foreigners is most beneficial to a nation is sanctioned by universal experience. We almost imagine that without the foreign element engrafted upon it the native element would soon lose its energy; and blind indeed is that country which shuts out the skill, the enterprise, and the capital which foreigners are apt to introduce. "When Frederick William became Regent," said the King of Prussia, in his history of Brandenburg, "the country" "neither made hats, stockings, or any woollen stuff. The industry" "of the French enriched us with all these manufactures." It was to the unlimited freedom granted to foreigners that Holland owed her ancient grandeur; whilst France cut off her own right arm by the revocation of the Edict of Nantes, and Spain destroyed her best interests by the expulsion of the Moors and the Jews. As for England, she has been rather slow in appreciating the benefit of attracting foreign industry. In the Middle Ages foreigners were looked upon with an evil eye by the bulk of the people, and in cities and corporate towns especially, the antipathy against them became so strong that they were not even endured within their precincts. For a long time foreigners met all manner of discouragement and ill-treatment in this country; and, strange to say, the merchants of London were foremost in endeavouring to procure the expulsion of foreign traders. Gradually a better feeling obtained. Sir Josiah Child, Algernon Sydney, Sir William Petty, and Sir William Temple endeavoured to disabuse the public mind respecting the bad influence of foreign traders; and after a time they met a better reception. Unfortunately, however, the politico-religious influence of the Reformation greatly paralysed this policy of freedom. When the exclusion of the Roman Catholics from the realm became a question of State, the expedient was resorted to of refusing naturalization to foreigners unless they consented to receive the Sacrament of the Lord's Supper, and took an oath of supremacy and allegiance. And when William III. was firmly seated on the throne, the State was protected from the introduction of Roman Catholics to any influential post in the Government, by enacting that no person born out of the United Kingdom or any of the Colonies, even though naturalized or denizens, unless born of English parents, should be a member of

the Privy Council or of either House of Parliament, nor fill any office of trust, civil or military, nor receive from the Crown any grant of land, &c. Subsequently the necessity of taking the sacrament in case of naturalization was removed; but when, in 1843, the many disabilities which were in force against aliens were abolished, the exceptions regarding their becoming members of the Privy Council and of either House of Parliament, were allowed to remain; not as formerly, as a protection from the introduction of Roman Catholics, but in deference to national susceptibilities. The original bill introduced by Mr. Hutt proposed to put naturalized subjects on the same footing in every respect with native subjects; but Sir James Graham, speaking on behalf of Her Majesty's Government, took objection to that, and said that it was undesirable to repeal a provision in the Act of Settlement which he considered most wholesome. "He was convinced," he said, "that it was the general feeling of the country; it might be a vulgar prejudice, but still he confessed he partook of it, and he believed that the people of the United Kingdom felt, that it was fitting that the members of their legislature should be native-born subjects, and persons capable of taking into consideration their habits, their feelings, and their associations. He was for British subjects being the legislators for Britain." It would ill become the writer, himself a naturalized subject, to complain of the exclusion thus established, having regard especially to the liberal spirit which pre-eminently distinguishes British legislation as regards aliens, whether naturalized or not. Yet it is very doubtful whether it is worth the while to maintain such exclusion. The chances that a foreign-born subject may be elected to represent any constituency in Parliament must be very rare; but should such a case ever arise, are not the electors the best judges of the character and qualifications of the candidates for election? If fear be entertained that the British Parliament be made the arena for foreign politics, or that political refugees, who have no stake in this country, may too readily be elected, would it not be sufficient to impose a condition that such alien born shall either have resided ten years in this country, or be connected by marriage with a British wife?

In some foreign countries a more liberal principle is adopted. In the United States of America, seven years' citizenship are sufficient as a qualification for a representative to Congress, and nine years' citizenship for that of senator. In France, by an ordinance of 1814, a special act, confirmed by both Chambers, was made necessary, in order that a foreigner might be able to sit either in the Chamber of Peers or of Deputies. In 1848 this law was revoked, but in 1849 a similar law to that which previously existed was re-enacted.

The fact that the disability now affecting aliens in England consists only in the exclusion from the highest civil privileges, indi-

cates the great advance made in liberal principles upon this subject. It is, indeed, indisputable that, for all practical purposes, foreigners in England enjoy the same rights and the same privileges as the natives; and that both in our courts of justice, and in the great marts of merchandise, no distinction whatsoever is now made on account of nationality or religion. That in the face of such an equality of rights and privileges I should have occupied the valuable time of the Association on any subject relating to foreigners especially, my only apology is, that the place of birth of the component parts of the population is often an important element in the ascertainment of many social and moral problems. However much a high and liberal tone of public opinion makes us regard all nations alike, it is a fact that each has its own idiosyncrasy, that each is endowed with especial talents and industry, and that each has its own manner of life. There is something inherent in man which attaches him to the country of his birth, and which he cannot shake off wherever he may dwell; and we may derive solid and valuable instruction from the study of those who are constantly around us, and who in their own persons exhibit to us all the peculiarities, habits, and manners of the many distinct races and nations which people this great wide world.

*On the RATES of MORTALITY and MARRIAGE amongst EUROPEANS
in INDIA. By SAMUEL BROWN, F.S.S.*

[Read before the British Association, Section (F), at Bath, September, 1864.]

IN a paper which I had the honour of reading before the Institute of Actuaries in December, 1862, an inquiry was made into the rates of mortality and marriage amongst Europeans in India, but was principally confined to the experience amongst military officers, as recorded in the books of the Madras Military Fund, and compared with the records of similar funds in the other Presidencies. The data—which I was favoured with an opportunity of collecting during an elaborate investigation into the position and prospects of the fund,—extended over the long period of fifty years, from 1808 to 1857, and related to more than 5,000 officers who had entered the fund in that period, and had either died, or withdrawn, or were living at the close of the observations, on the 1st January, 1858. The subdivision of the facts into two periods, of those who entered from 1808 to 1822, and from 1822 to 1857, showed a very marked diminution at every quinquennial period of age in the rate of mortality up to the age of 50, after which, in the latter period, the numbers were not sufficient fairly to carry on the comparison. On the average of all ages the rate in the former period was 3·92 per cent., and in the latter 2·69 per cent., though allowance must be made for the fact that some of the latter had not attained such advanced ages.

Another conclusion, clearly arrived at, was, that at all ages below 65 the mortality amongst married officers, was considerably less than amongst bachelors, being seldom more than 60 or 70 per cent. of the latter. The average rate of mortality at all ages was amongst bachelors 3·44 per cent., married officers 2·83 per cent., and widowers 4·45 per cent.

Amongst retired officers the rate of mortality in each class, whether bachelors, married men, or widowers, was found to be always highest at the younger ages, and to diminish with great regularity to the ages 55 to 60. After this age it seems to exceed generally, by about 25 per cent., the rate of mortality by Dr. Farr's healthy life table for males.

In regard to the marriage-rates, the observations were minute enough to afford some interesting deductions. A paper then recently read by Mr. Archibald Day, before the Institute of Actuaries, "On the Statistics of Marriages amongst the Families of the Peerage,"

extending for a period of 100 years preceding 31st December, 1855, and comprising the marriages amongst 2,721 bachelors, enabled me to make comparisons with those amongst military officers in the Madras army.

The marriages amongst the aristocracy, as compared with the general population, were observed to take place at a much later period of life, and still more so amongst widowers. This peculiarity was even more strongly observable amongst bachelors, being military officers in India, and to a certain extent amongst the widowers, the rates of marriage of the latter between 50 and 55 being double that of the peerage. It should be noticed that this period of life is nearly approaching that which shows the maximum rate of retirement, and may perhaps be connected in some way with the return of officers to Europe. Of officers in India, the average rate of marriage at all ages was 3·75 per cent. amongst the bachelors, and 9·25 per cent. amongst widowers, whilst in the peerage of Great Britain the rates were respectively 3·63 per cent. and 5·55 per cent.

In my former paper a table was also given, showing amongst 1,526 first marriages, 164 second, 17 third, and one fourth marriage, the number which were contracted amongst officers of the Madras army, at each quinquennial age of the husband with wives of the same or any other quinquennium of age, from which the conclusion was clearly drawn, that as the husband married later in life, the greater was the discrepancy of age between himself and his wife.

The average age at which bachelors marry appeared to be about 30, and of their wives 23, a difference of about seven years. Under 20, the bachelors marry wives about three years younger than themselves, and from 20, the discrepancy in favour of a younger wife steadily increases each five years, till at 60–65 years of age for the husbands, it is twenty-five years younger for the wife. For widowers, the average age of marriage appears to be about 41, and their wives 27, a difference of fourteen years—just double that of bachelors. Under 25, in widowers' marriages, the average age of the wife is five years older than her husband, but afterwards the discrepancy of age in favour of a young wife increases till it is much higher than that of bachelors, being from 30 to 34 years when widowers marry at 60 and upwards.

Since the publication of that paper, the interest in the subject has by no means diminished. The vast impulse given to the commercial undertakings of India, railways, telegraph, and financial, land and trading companies, must have led to a great increase in the European population, an increase which, there is every reason to believe, will become annually greater as European skill and capital find profitable employment in those wide fields of enterprise. At the same time it will be many years before a proper organization can

be given to the collection of the statistics of life and health amongst a population so scattered or migratory as this is likely to be. Young men, sent out as engineers for commercial, telegraph, and other companies, will, in most cases, have to proceed to new and unsettled districts, and frequently move about from one station to another. It would be well if all public companies, as well as the Government services, were to keep a careful register of their employés, their ages at admission, date of withdrawal or death, and, as far as possible, of their marriages, families, &c. In the meantime the most precise information on these subjects at present available will be found in the records of the annuity, provident, and pension funds for widows and children, which have been for many years established in the different Presidencies, both for the military and civil services of the Government. They require for their own purposes that the date of the birth, marriage, withdrawal, or death of each member should be furnished, as well as the date of birth of his wife, and of her second marriage or death, and of the births or deaths of all his children. If these registers had been as carefully kept from the beginning as they are at present, there would have accumulated by this time the materials for working out several important problems in population statistics. It is desirable, at any rate, to gather together what has hitherto been made public, for comparison with more complete data which may be given hereafter.

It was from the records of these funds that the facts stated in my former paper were drawn relative to the rates of mortality and marriage amongst military officers in India, and I propose now to extend the inquiry to European civilians resident there.

The most important sources of original facts, in reference to the mortality and marriage amongst European civilians in India, will be found in the following reports, with some incidental notices in the publications which were enumerated in my former paper:—

In 1836 (20th February), Mr. Griffith Davies' "Report on the "Bombay Civil Fund."

In 1842, Mr. Davies, for the Bengal Uncovenanted Civil Service Pension Fund, deduced a table of mortality from the Bengal Civil Service.

In 1850, "Report of the Committee on the Bengal Civil Service "Fund."

In 1850, Mr. Davies' "Report on the Madras Civil Fund."

In 1851, Mr. Davies' "Report on the Bengal Civil Fund."

In 1852, Mr. Neison's "Report on the Bengal Civil Fund."

In 1852, Mr. Neison's "Report on the Madras Civil Fund."

In 1855, Mr. Neison's "Report on the Madras Civil Fund" (in which he introduces the mortality according to years of service).

In 1861 (26th June), Mr. W. Grant's "Report on the Subsidiary
" Branch of the Madras Civil Fund."

In 1861 (18th November), his "Report on the Charity Branch
" of the above Fund."

In 1861 (24th June), Mr. Neison's "Report on the Bombay
" Civil Provident Fund."

In addition to the above, the following reports on the medical
funds contain much interesting matter :

Madras Medical Fund, Mr. Neison's Reports, 16th February and
29th May, 1856.

Bombay Medical Fund, Mr. G. Davies' Report, 15th February,
1847.

Bombay Medical Fund, Mr. Neison's Reports, 2nd January,
1854, and 7th November, 1855.

Bengal Civilians.

In Mr. Davies' "Report on the Bengal Civil Fund," in June, 1851, he states that not having the means of forming mortality tables from their own experience, he had been obliged to examine the other Indian reports for original data to guide him. In 1842 he had formed for the Bengal Uncovenanted Service Family Pension Fund, a table of mortality amongst the Bengal Civil Service, from the lists of Dodwell and Miles. Such table gave the mortality below the age of 40, somewhat lower than the Northampton Table, and higher afterwards. But on examining Mr. Neison's table for the Bengal Military Fund, and considering that soon after the age of 40 the members of the Civil Service Fund begin to return to this country, he had determined to adopt the Northampton Table from the age of 40 and upwards, and continue it below that age by his own table from the Bengal Civil Service, above alluded to.

Mr. Neison, in his report of 14th December, 1852, following this, still regrets that he has not the actual experience of the Fund to refer to, but objects to the lists of Dodwell and Miles, which he considers worthless for the purpose of deducing the rates of mortality amongst the servants of the Company, since they were not compiled with this object in view, and can only be regarded as ordinary directories. Major Hannington, however, had pointed out a most important document, and one more trustworthy for the purpose. It is a "Register of the Honourable East India Company's Civil
" Servants of the Bengal Establishment, from 1790 to 1842, &c.,
" compiled under the direction of the Honourable H. T. Prinsep, late
" Member of the Council of India, by Ramchunder Doss."

The rate of mortality for each quinquennial period of age, as given

by the compiler in the introduction, and also the rates from an adjusted table deduced by Major Hannington, are as follow :—

Ages.	Exposed to Risk.	Died.	Rate per Cent.	Adjusted by Major Hannington. Rate per Cent.
20.....	231	8	3·47	2·55
21 to 25	4,782	93	1·95	1·98
26 „ 30	4,010	84	2·09	1·83
31 „ 35	3,177	48	1·51	2·04
36 „ 40	2,172	60	2·76	2·45
41 to 45	1,496	44	2·94	3·09
46 „ 50	818	29	3·55	3·82
51 „ 55	392	23	5·87	4·55
56 „ 60	152	5	3·30	5·31
61 „ 65	57	3	5·26	6·20
66 to 70	14	1	7·20	7·47
71 „ 75	2	—	—	9·15
76 „ 80	—	—	—	11·63
81 „ 85	—	—	—	17·86
86 „ 90	—	—	—	24·83
91 to 95	—	—	—	37·93
96.....	—	—	—	100·
	17,302	398	2·30	3·38

But it had been clearly shown by the records of the military funds that the rate of mortality in India had diminished of late years, and, as the above table did not afford the means of a similar comparison, Mr. Neison recomputed the rates according to different decennial periods after the members' arrival from Europe. It is probable, however, that by this minute subdivision, the facts at some of the ages are too few to admit of averages for a fair comparison, and it will be quite sufficient to give Mr. Neison's rates for the two periods 1790-1819 and 1820-42 :—

Bengal Civil Service—Members Arriving in India in the Years

Ages.	1790-1819.			1820-42.		
	Exposed to Risk.	Died.	Mortality per Cent.	Exposed to Risk.	Died.	Mortality per Cent.
21—25	2,898	51	1·76	2,006	41	2·04
26—30	2,550	50	1·96	1,528	30	1·96
31—35	2,248	40	1·78	975	10	1·03
36—40	1,937	48	2·48	285	4	1·40
	9,633	189	1·96	4,794	85	1·77

At the younger ages it would appear that the rate has somewhat increased, or remained the stationary, but at quinquennial ages above 30, the diminution in mortality is considerable, which Mr. Neison accounts for by supposing that persons of the most experience will be the first to take advantage of the precautions suggested as best calculated to preserve health. These observations, however, relate only to the members of the civil service, whilst actually employed in India. A very important question arises as to the rate of mortality amongst the members after retirement. Without the actual experience of the fund, which he thinks would be in this case so valuable, Mr. Neison argues, from the official documents to which he had access in the India House, relating to the retired officers of the Bengal Military Service, that the rate of mortality amongst them does not differ widely from that of the general population of England and Wales at corresponding ages; and further, that the rates of mortality amongst retired members, both of the civil and military services, are almost identical. He therefore constructed a new table for the valuation of the fund. Admitting that Mr. Davies' table, up to the age of 40, agreed very nearly with the ratio of deaths pointed out by the preceding facts, he had taken the same rates up to that age, but continued the table from the age of 45 by his own table, given in his report on the Bengal Military Fund in 1849; and between the ages 39 and 45, the terms were interpolated. The effect of this is to show at ages above 40, a considerable improvement in the duration of Indian lives, in fact to approximate after that period to the general rate of mortality in this country.

In the course of an investigation now proceeding into the Bengal Civil Fund, I have been favoured by the secretary not only with a table which enables me to bring down the observations of the Bengal Civil Service to a very recent date, but with the means of collecting the experience of the fund itself for the thirteen years 1850 to 1862 inclusive. These data are important, as they show the mortality of the members in each class, bachelors, married men, and widowers, as well as the mortality amongst females and children, and the rate of marriage amongst both sexes. The experience of the Bengal Civil Service has been divided into two periods, 1800 to 1830, and 1831 to 1858, showing at the middle ages, 20 to 40, a considerable diminution in the rate of mortality in the latter period.

The number who entered in the former period was 647, of these 283 died, 238 became annuitants, 60 withdrew, and 66 were living to 1859. The number exposed to risk was 13,887, and the rate of mortality 2.04 per cent. In the latter period 568 entered, of whom 96 died, 4 became annuitants, 26 withdrew, and 442 were living to 1859; the number exposed to risk was 5,621, and the rate of mortality 1.70 per cent.

The following table shows the rate of mortality at the quinquennial ages in the two periods referred to, and in the whole period 1801 to 1858 inclusive, compared also with Davies' table used in 1850 (which Mr. Neison also followed up to age 40), with Neison's table for the Bengal army, 1800 to 1847, and with Farr's healthy life table for males. The total rates per cent. also are given for the Bengal Civil Fund, thirteen years' experience, terminating 1st January, 1863, but the numbers are scarcely sufficient to divide the latter into the three classes, bachelors, married men, and widowers, except by grouping periods of 10 years of age together. The column for the Madras Civil Service, 1760 to 1853, is added from the comprehensive "Report on the Sanitary State of the Army in India," in which Dr. Farr has brought together such varied information from every available source.

Rates of Mortality per Cent.

Ages.	Bengal Civil Service.				Bengal Civil Fund.		G. Davies. Used in 1850.	Neison. Bengal Army, 1800-47.	Madras Civil Service, 1760 to 1853.	Farr's Healthy Life Males.
	1801-30.	1831-58.	Retired, 1801-58.	Active and Retired. Total, 1801-58.	Thirteen Years to 1863.	Of whom were Killed in the Mutiny.				
14—.....	2·19	2·44	—	2·24	—	—	—	1·19	—	·72
20—.....	1·78	1·48	—	1·65	1·07	·41	1·41	2·19	1·40	·92
25—.....	2·20	1·73	—	2·02	1·80	·64	1·59	2·34	1·52	·99
30—.....	1·57	1·24	—	1·47	1·51	·44	1·77	2·62	1·55	·96
35—.....	2·00	2·81	8·00	2·19	1·88	·55	1·94	2·63	1·63	1·24
40—.....	2·02	3·01	1·08	2·08	1·08	·32	2·24	2·55	1·79	1·21
45—.....	2·19	—	1·14	1·76	2·16	·23	2·52	2·92	2·04	1·70
50—.....	4·29	—	1·81	2·54	2·46	·16	3·04	2·23	2·52	1·85
55—.....	3·77	—	2·55	2·71	2·07	—	3·59	2·54	2·84	2·86
60—.....	18·18	—	3·70	4·26	4·26	—	4·32	3·03	2·97	3·40
65—.....	—	—	6·25	6·22	7·79	—	5·43	1·52	3·57	5·71
70—.....	—	—	6·34	6·34	—	—	7·46	—	5·05	7·34
75—.....	—	—	20·93	20·93	14·29	—	10·81	—	8·50	12·59
80—.....	—	—	—	—	100·	—	—	—	—	—
	2·04	1·70	3·05	2·10	1·76	·41	—	2·28	—	—
Exposed to Risk }	13887·	5,631	3248·	22,766	7625·5	—	—	88,630	—	—
Died	283·	96	99	478	134	31	—	2,019	—	—

The records of the Bengal Civil Fund show the number of members killed in the mutiny, and the mortality is considerably altered thereby, the large proportion of 31 out of 134 deaths being due to this cause, and principally affecting the ages 25 to 30, at which ages they amounted to nearly one-third of the total deaths; being all on active service, the ages above 55 remain unaltered.

From the thirteen years experience of the Bengal Civil Service Fund, I was enabled to trace the rates of mortality and marriage amongst bachelors and widowers, or of mortality and the chances of becoming widowers amongst married men at each age. The inquiry is too minute to be pursued here, but the summary may be given.

Of bachelors 213 were living on 1st January, 1850, and 386 entered since. Of these 14 were killed in the mutiny, 31 died, 23 withdrew, 245 married, 42 retired, and 244 were living on 1st January, 1863. The number exposed to risk was 2,919, of whom 1·54 per cent. died, including ·48 per cent. who were killed in the mutiny, and 8·39 (a very large proportion) married.

Of married men, 249 were living 1st January, 1850, of whom 29 were married to second wives; since then, 245 bachelors married, and 6 entered the fund as married men, 18 entered into a second marriage, and 1 for the third time. Of the total number 519, 60 died (of whom 15 were killed in the mutiny), 9 withdrew, 47 became widowers, 120 retired, and 283 were living 1st January, 1863. The number exposed to risk was 3539·5, and the rate of mortality was 1·69 per cent., including ·42 per cent. killed.

Of widowers, 24 were living 1st January, 1850, and 47 became widowers since, of whom 9 died (2 of them being killed), 27 remarried (of whom 1 married for the third time), 14 retired, and 21 were living 1st January, 1863. The number exposed to risk was 274·5, and the rate of mortality was 3·28 per cent. (of whom ·73 per cent. were killed in the mutiny).

These facts all relate to service in India. The retired members might be traced in the same way under each class.

Marriage-Rate.

The rates per cent. of marriage at each quinquennial age, both amongst bachelors and widowers, are very irregular, but they seem in nearly all cases to be unusually high. It would be well to continue the observations a few years longer. In the following table I have compared together the rates in the Bengal Civil Fund, in the Madras Military Fund, as given in my former paper, in the peerage of Great Britain, and in the general population of England and Wales, as shown in the Registrar-General's reports.

Rates per Cent.

	Bachelors.					
	Bengal Civil Fund, 1850-62 inclusive.		Madras Military Fund, 1808-57 inclusive.		Peagee of Great Britain.	General Population.
	Active.	Retired.	Active.	Retired.	(Day.)	(Farr.)
15—	—	—	·17	—	·19	·46
20—	8·16	—	2·61	·60	4·21	11·21
25—	8·74	—	4·82	3·48	7·70	12·21
30—	13·67	—	6·26	2·67	7·14	7·85
35—	7·50	—	5·40	2·67	5·47	4·56
40—	2·60	14·29	4·06	2·94	3·95	2·80
45—	2·99	5·61	3·60	1·18	1·98	1·45
50—	3·92	1·67	4·85	1·51	1·07	·71
55—	—	12·50	3·49	1·20	1·05	·35
60—	—	—	—	—	—	·15
65—	—	—	—	—	—	·05
70—	—	—	—	—	—	·03
75—	—	—	—	—	—	·06
	8·39	4·44	3·75	2·23	3·63	—
Number living..	2,919	135	45,439	2509·5	—	—
Number who } married ... }	245	6	1,706	56	—	—

From 244 cases in which the ages both of husband and wife were given, it may be concluded that the average age of a bachelor member of the fund on marrying is 28, and of his wife about 22; the difference is six years, and the age at marriage is a little below the age at which the bachelor members of the Madras Military Fund marry, which appears to be 30, and the wife 23, a difference of age of seven years.

In the following table is shown, for bachelors who marry at any quinquennial period of age, the number of wives at each quinquennial group of ages, whether older or younger than the husband.

Bengal Civil Fund. Bachelors Married in Thirteen Years, 1850-62 inclusive.

Age of Hus- band.	Age of Wife.					Total.	Per Cent. of Total Marriages. Age of Wife.					Total.
	17—	20—	25—	30—	35-40.		17—	20—	25—	30—	35-40.	
20—	26	53	7	1	—	87	10·6	21·7	2·9	·4	—	35·7
25—	18	47	11	2	—	78	7·4	19·3	4·5	·8	—	32·0
30—	12	25	6	5	3	51	5·0	10·2	2·5	2·1	1·2	20·9
35—	2	6	5	—	—	13	·8	2·5	2·1	—	—	5·3
40—	3	—	2	1	—	6	1·2	—	·8	·4	—	2·5
45—	—	—	2	3	1	6	—	—	·8	1·2	·4	2·4
50—	—	1	—	1	—	2	—	·4	—	·4	—	·8
55—	1	—	—	—	—	1	·4	—	—	—	—	·4
	62	132	33	13	4	244	25·4	51·1	13·6	5·3	1·6	100·

of Marriage.

Widowers.						
Bengal Civil Fund, 1850-62 inclusive,		Madras Military Fund, 1808-57 inclusive.		Peerage of Great Britain. (Day.)	General Population. (Farr.)	
Active.	Retired.	Active.	Retired.			
—	—	—	—	—	—	15—
—	—	13·56	—	17·86	30·77	20—
22·64	—	11·45	—	14·91	35·79	25—
14·28	—	13·19	28·56	12·49	28·63	30—
13·68	—	8·66	40·	10·46	20·31	35—
11·11	—	9·90	17·39	9·95	14·08	40—
3·85	16·00	9·01	16·67	7·72	8·86	45—
—	9·84	10·98	16·50	5·91	5·71	50—
5·26	—	4·35	7·23	4·25	3·20	55—
—	—	3·90	—	3·27	1·75	60—
—	—	—	—	2·17	·86	65—
—	—	3·70	—	1·88	·32	70—
—	—	—	—	·83	·10	75—
9·84	5·85	9·25	13·71	5·55	—	
274·5	85·5	1,936	197·	—	—	Number living
27·	5·	179	27·	—	—	{ Number who married

Bombay Civilians.

The first report of Mr. Davies on the Bombay Civil Service Fund is dated as far back as 20th February, 1836. He collected the experience of the fund for 29 years, from its commencement to May, 1833, on the assumption that all the members were 20 years of age on their arrival in India, and then compared the results with Mr. Prinsep's table of the Bengal Civil Service from 1790 to 1831, as given in the first volume of the "Journal of the Asiatic Society." His own facts are but few in number, but they show a remarkable uniformity at all ages under 50, fluctuating between 2·35 and 2·60 per cent., and at the younger ages considerably exceeding the rates of mortality in Bengal. The following is the summary:—

Experience of the Bombay Civil Fund, Twenty-Nine Years, to 1833.

Ages.	Exposed to Risk.	Died.	Mortality per Cent.
20—.....	954	25	2·60
25—.....	724	17	2·35
30—.....	570	15	2·63
35—.....	410	10	2·44
40—.....	294	7	2·38
45—.....	193	5	2·59
50—.....	110	5	4·57
55—.....	23	1	4·26
60-62	8	1	12·50
	3,287	86	2·62

From a paper which was furnished by two of the East India Directors, Messrs. Ravenshaw and Loch, comprising a summary of the years 1805 to 1822, for the civil services in Bengal, Madras, and Bombay, it appeared that there were, on an average of each year, 431 living in Bengal, 226 in Madras, and 103 in Bombay, and the rates per cent. of deaths during the period were respectively 2·34, 2·30, and 3·08 per cent.

The experience of the Bombay Civil Fund bore out the observation generally made, that married life is subject to less mortality than single life, the rate of the former being only 2·51 per cent., compared with 2·62 per cent., above given.

As to retired members, he proposed to recommend the use of the Northampton Table at advanced ages, as allowing for the deterioration of health in Indian lives; though the experience of the fund really showed only 9 deaths above 47, whilst $10\frac{2}{3}$ might have been expected by the use of that table. The table he used for the valuation, was constructed from the actual experience before 47, and from that age continued by the Northampton Table. By this table for a constant community of 170 persons living, at ages 20 to 45, 9·20 would have to be sent out annually, 4·86 would retire, and 4·34 would die.

Mr. Neison, in his report on this fund, 24th June, 1861, after referring to his other reports for information on the rate of mortality amongst European lives in India, copies word for word his own observations, tables, and comparisons in his report on the Bengal Civil Service Fund in 1852, and finally adopts the same table as he there gives, both for the active and retired services, starting only with the number 79,792, instead of 100,000, as living at 20.

It does not appear, therefore, that we have any original data from the experience of the Bombay Civil Fund since the small table furnished by Mr. Davies in 1836.

Madras Civilians.

In the first report of Mr. Davies, dated 9th March, 1850, on the Madras Civil Fund, he seems to have been unable to obtain the ages of the retired members or of their wives, or the numbers and ages of their children. He appears to have used the tables in his report of the Madras Military Fund for the valuation of the pensions, till death or marriage of the widows and daughters; and the single life table for females; and the joint life table for husband and wife, from the tables of the Bombay Civil Fund, in his report of 1836. No original data are here obtained.

Following this was Mr. Neison's report, dated 27th December, 1852, in which he repeats word for word his remarks on mortality which appear in his report for the Bengal Civil Service, dated a few

days earlier, namely, on the 14th December in the same year. He, in conclusion, uses the same table both for active and retired service which we have before described, going back, however, to the basis of 100,000 as entering at age 20, and on which his subsequent monetary tables are computed.

But a subsequent report, bearing date the 20th July, 1855, furnishes some original data which are worth examining, relating to the mortality which was observed according to years of service, having the opportunity to compare with them a similar return which I have drawn up from the records of the Bengal Civil Service, from 1790 to 1842, amongst the members who were on service in India.

Years of Service.	Bengal Civil Service, 1790-1842.				Madras Civil Fund, 1792-1854.	
	Exposed to Risk.	Rates per Cent.			Exposed to Risk.	Per Cent. Died.
		Died.	Resigned.	Retired.		
0—.....	4,110	2.16	.51	—	3320.	1.39
5—.....	4,178	2.08	.79	—	2863.5	1.64
10—.....	3,366	1.37	.59	—	2444.	1.31
15—.....	2,338	2.61	.98	.04	2052.	1.85
20—.....	1,628	2.95	1.90	.06	1675.5	1.91
25—.....	944	3.49	.95	5.82	1326.5	1.81
30—.....	464	4.31	1.51	7.54	1069.	2.53
35—.....	183	5.46	—	10.38	836.	2.75
40—.....	72	2.78	2.78	11.12	613.5	3.26
45—.....	18	11.11	—	—	425.	2.59
50—.....	4	—	—	—	285.5	4.55
55—.....	—	—	—	—	150.5	8.64
60—.....	—	—	—	—	39.5	17.72
65—.....	—	—	—	—	7.	14.29
70-75 ...	—	—	—	—	1.	100.
	17,305	2.30	.84	.69	17108.5	1.96
Total number	—	398	146	119	—	335

In the Bengal Civil Service the average age of arrival in India on the whole period, 1790 to 1842, was about $18\frac{1}{2}$; but since 1820, it appears to have increased, and latterly may be taken as nearer age 20. By assuming the latter age for the commencement of observation, the rate of mortality in the above table will be found to correspond very nearly with the table under ages compiled under Mr. Prinsep's instructions, but after the first fifteen years is much higher than the rates observed in the most recent data from 1801 to 1858. There are scarcely any retirements under 25 years' service, then they increase rapidly up to 40-45, when they are upwards

of 11 per cent. per annum, and the mortality diminishes in proportion.

In Mr. Neison's facts from the Madras Civil Fund, it will be noticed, from the very long periods of service of some of the members, that those who have retired up to 1st January, 1854, are included under observation. [The mortality, therefore, should only be compared for the first 25 years of service, and it will be found generally in Madras to be about 70 per cent. of that in Bengal.

In reference to the mortality amongst civilians in India, the general conclusions at which we arrive, are—

1. That a considerable diminution has taken place of late years in the mortality at the middle ages, 20 to 35, and at all ages, if we compare it with the earlier observations of the present century.

2. That a very marked distinction may be observed in favour of married life.

3. That as compared with Farr's English healthy life table, the difference varies from $\frac{1}{2}$ to 1 per cent. higher between the ages 20 and 55, after which it fluctuates, but is generally scarcely higher than the English rates.

In reference to the rate of marriage—

1. That the rate of marriage amongst bachelors is much higher at every age than in the peerage of Great Britain, and though at ages under 30, it may be about 25 per cent. less than that of the general population, yet at all other ages it is considerably more.

2. That marriages take place at a much earlier period than in the military service, and on the average of all ages under 40, is nearly double.

3. The same remark applies to widowers, whose marriage-rate under the age of 45 is considerably higher amongst the civil than the military service, though not more than 70 per cent. of that of the general population of England and Wales.

I trust that the few statistics here recorded may lead to a more careful collection in the books of the Indian Annuity and Pension Funds, from which so much information on the families of members can be readily obtained. They may throw light not merely on the relative mortality of India and this country—both subjects at the present time of the highest interest—but to the elucidation of many novel questions, which an accurate register of family statistics could not fail to afford us.

The facts recorded in the previous tables may be compared with those given in Mr. Tait's interesting paper, read during last session, on the mortality amongst Eurasians, as being a mixed race of Europeans and Asiatics, and connected with the Uncovenanted Civil Service.

If space permitted me to make a full comparison with the mor-

talities of natives of India—soldiers and civilians—we should have to consult the admirable reports with which Colonel Sykes has from time to time for more than twenty years enriched the pages of the *Statistical Journal*.

I could not, however, conclude this part of the subject without a brief allusion to the recent and very elaborate “Report of the Commissioners appointed to enquire into the Sanitary State of the Army in India,” in which our distinguished President of this Section, Dr. Farr, took so conspicuous a part. The fullest evidence was taken upon every subject that affects the health or mortality of the Indian army, the causes of the excess of the death-rate amongst Europeans as compared with natives, and the remedies suggested for the almost entire disappearance of such excess. The recommendations will be principally effective in bettering the condition of the common soldier; but some of them, such as the selection of hill stations, the improvement of barracks, &c., would no doubt incidentally benefit the European officers also. In the report and appendix the summaries of the facts relating to Europeans in the civil or military services are compared. The general tenor of the report leads irresistibly to the conclusion that the great mortality, which formerly decimated the Indian armies, might, by judicious arrangements, be reduced to the ordinary rate amongst European civilians there; whilst the mortality amongst the latter has for many years undergone so great an improvement, as to present at some ages no very striking contrast with that of similar classes in this country; a remarkable proof that the science of statistics is not (as it used to be thought) a mere dry and tedious marshalling of figures, but an eminently practical and useful study, leading, even in the small part of its domain which we are now exploring, to suggestions which may be the means of preserving thousands of lives, and substituting the enjoyments of healthy existence for the uncontrolled ravages of disease and death.

BRITISH ASSOCIATION, 1864.

THIRTY-FOURTH *Meeting of the* BRITISH ASSOCIATION *for the*
Advancement of Science, held at BATH, 15th—20th September,
 1864.

Section (F).—Economic Science and Statistics.

President.—WILLIAM FARR, M.D., D.C.L., F.R.S.

Vice-Presidents.—Sir John Bowring, F.R.S.; James Heywood, F.R.S.; the Mayor of Bath, Right Hon. Joseph H. Napier; Colonel W. H. Sykes, M.P., F.R.S.

Secretaries.—Frederick Purdy; Edmund Macrory; and E. Turner Payne.

Committee.—A. Ansas; Samuel Brown; H. G. Bohn; C. H. Bracebridge; J. Bonomi; E. B. Elliott; W. Ewart, M.P.; Professor Fawcett; F. P. Fellowes; Major-General Hannyngham; Professor Hennessy; Edwin Hill; Pearson Hill; Dr. Hodgkin; Rev. Dr. Hume; Sir Willoughby Jones, Bart.; W. Gore Langton, M.P.; Dr. Lee; Professor Levi; A. J. Macrory; Horace Mann; The Bishop of Natal; Dr. Orpen; Rev. W. C. Osborn; The Recorder of Birmingham; The Recorder of Bath; George Senior; R. J. Spiers; Colonel Torrens; Thomas Webster; Robert Wilkinson; James Yates.

The following Papers were read in the Section:—

Thursday, 15th September, 1864.

The President's Address.

The Recorder of Bath.—Statistics of Crime and Criminals.

Professor Levi.—Statistics of the Number and Occupations of Foreigners in England.

Friday, 16th September, 1864.

James Heywood.—Report of a Committee of the British Association, on Uniformity of Weights and Measures.

[*A Deputation from the Chemical Section attended on the Presentation of this Report.*]

Colonel Torrens.—On the Land Transfer System of Australia, as applicable to Ireland.

Samuel Brown.—On the Mortality of Europeans in India.

Edward Spender.—On the "Truck System" in some parts of the West of England.

W. Chetwynd.—On the Progress of Postal Banks (Post Office Savings Banks)

Saturday, 17th September, 1864.

A. B. Middleton.—Sanitary Statistics of Salisbury.

Dr. J. A. Symonds.—Sanitary Statistics of Clifton.

R. T. Gore.—On the Mortality of the City of Bath.

Monday, 19th September, 1864.

Major-General Hannyngton.—Some Remarks on the French Calculating Machine. (The machine itself was exhibited.)

The President.—Life Tables by the Swedish Calculating Machine (with photographs of the machine, by A. Claudet).

Professor Fawcett.—On the Causes which Produce the present High Rate of Discount.

Professor Levi.—Statistics relating to the Royal Navy.

E. B. Elliott.—Military Statistics of certain Armies, especially of those of the United States.

J. Wilson.—Registration of Births and Deaths in Ireland.

Handel Cossham.—Statistics of the Coal Trade: Colliers Employed, Wages Paid, and Social Condition of the Miners Employed in the northern portion of the Bristol Coal Field.

Tuesday, 20th September, 1864.

T. Webster and J. F. Bateman.—Report on Scientific Evidence in Courts of Judicature.

Dr. Wilson.—Sanitary Statistics of Cheltenham.

Rev. Dr. Hume.—On the Locality of the various Religious Bodies in Ireland.

Frederick Purdy.—On the Quantity and Value of Grain Imported into the United Kingdom since the Repeal of the Corn Laws.

M. Guerry of the Institute of France.—On Crime in England and France.

James Heywood, F.R.S.—On the Recommendations of the Public School Commissioners for the Distribution of School Time.

Lieut.-Colonel Kennedy.—On the British Home and Colonial Empire in its Mutual Relations.

W. Tite, M.P.—Health Statistics of the City of Paris.

W. Westgarth.—Statistics of Crime in Australia.

R. Herbert.—Statistics of Live Stock.

PROCEEDINGS OF THE STATISTICAL SOCIETY.

SESSION 1863-64.

First Ordinary Meeting, Tuesday, 17th November, 1863.

Colonel W. H. Sykes, M.P., President, in the Chair.

The following Candidates were elected Fellows of the Society,
viz.:—

J. W. Bone, Esq., B.A.	|	J. W. Maclure, Esq.
------------------------	--	---------------------

The following Papers were read:—

“On Dutch Statistics.” By Mr. Hendriks.

“On the Industrial Progress of Victoria as connected with its
“Gold Mining.” By H. S. Chapman.

Second Ordinary Meeting, Tuesday, 15th December, 1863.

Colonel W. H. Sykes, M.P., President, in the Chair.

The following Candidate was elected a Fellow of the Society,
viz.:—

W. H. Charlton, Esq.

The following Papers were read:—

“On the Continuous Price of Wheat for 102 Years (1380 to
“1481).” By Professor J. E. T. Rogers.

“On Edibles and Potables for 1506.” By the President.

Third Ordinary Meeting, Tuesday, 19th January, 1864.

Colonel W. H. Sykes, M.P., President, in the Chair.

The following Candidates were elected Fellows of the Society,
viz.:—

Goldwin Smith, Esq., M.A.	|	John Ely, Esq.
Walter Bagehot, Esq.	|	A. Wyatt-Edgell, Esq.

The following Paper was read:—

“On the Commercial Progress and Resources of Central
“British North America.” By Professor Hind, M.A., Toronto.

Fourth Ordinary Meeting, Tuesday, 16th February, 1864.

William Newmarch, Esq., Vice-President, F.R.S., in the Chair.

The following Candidates were elected Fellows of the Society,
viz.:—

J. D. Logan, Esq.	|	W. E. Williams, Esq.
W. White, Esq.	|	C. Capper, Esq.

The following Paper was read:—

“On Some Defects and Results of the Registrar-General’s
“Reports.” By Mr. W. L. Sargant.

Fifth Ordinary Meeting, Tuesday, 15th March, 1864.

Colonel W. H. Sykes, M.P., President, in the Chair.

The following Candidates were elected Fellows of the Society,
viz.:—

M. N. Adler, Esq., M.A.	|	T. McCombie, Esq.
		Alfred Tyler, Esq.

The following Papers were read:—

“On some Statistics Relating to Shipping Casualties.” By Mr. Jeula.

“On Shipwrecks in the Royal Navy.” By Mr. W. B. Hodge.

Sixth Ordinary Meeting, Tuesday, 19th April, 1864.

Colonel W. H. Sykes, M.P., President, in the Chair.

The following Candidates were elected Fellows of the Society,
viz.:—

S. R. Solly, Esq., F.R.S.	|	W. Hickman, Esq., R.N.
F. B. Williams, Esq.	|	H. Reed, Esq.

The following Paper was read:—

“On the Resources of Brazil.” By Mr. James Heywood.

Seventh Ordinary Meeting, Tuesday, 17th May, 1864.

James Heywood, Esq., M.A., Vice-President, in the Chair.

The following Candidates were elected Fellows of the Society,
viz.:—

J. McClelland, Esq.	|	G. Patmore, Esq.
T. Pain, Esq.	|	S. Raleigh, Esq.
Rev. A. Hume, LL.D., &c.		

The following Papers were read:—

“On the Statistics of Roman Catholics in England.” By Mr. W. G. Lumley.

“On the Mortality of Eurasians.” By Mr. P. M. Tait.

Eighth Ordinary Meeting, Tuesday, 21st June, 1864.

Colonel W. H. Sykes, M.P., President, in the Chair.

The following Candidate was elected a Fellow of the Society,
viz.:—

W. Thomson, Esq.

The following Papers were read:—

“On the Statistics of Aberdeen.” By the President.

“On the Statistics of Crime in Russia.” By Mr. Michell.

MISCELLANEA.

CONTENTS:

	PAGE		PAGE
I.—Comparative Education in 1862	584	III.—Strikes in the Manufacturing Districts	587
II.—Post Office Savings' Banks	585	IV.—Cost of the Cotton Famine in Relief to the Poor	596

I.—*Comparative Education in 1862.*

UNDER this title Mr. W. L. Sargant recently addressed a letter to the Editor of the Birmingham *Daily Post*. The subject is important, but the accuracy of the test of education by *marks* in the marriage register was controverted, so far as the cotton manufacturing towns of Lancashire were concerned, by the Rev. W. N. Molesworth, of Rochdale, when this topic was under discussion by Section F of the British Association, at Manchester, in 1861, on the ground that from causes which he stated many persons of both sexes who could write tolerably well were led to make their marks on the marriage registers.

“For the first time we are able to ascertain the state of education in our towns; the Registrar-General, in his last report (for 1862), having given the number of signatures and of marks to the marriage registers in every district. Hitherto we have had the information for counties only. I have calculated the percentage for the principal towns.

“I believe these figures to be unusually trustworthy. It is alleged indeed, that some nervous persons sign with a mark although they can write, and that some young women who can write decline to do it when their bridegrooms cannot do the same. But such peculiarities will be found as much in one town as in another, and therefore do not disturb the proportions, nor injure the results for the purpose of comparison.

Arranged according to Excellence. Of 100 Persons Married, there Signed their Names—

	Men and Women together.	Men only.	Women only.		Men and Women together.	Men only.	Women only.
In England and Wales }	72	76	67	Leicester	73	81	65
Cheltenham	89	88	89	Coventry	71	79	63
Portsmouth	89	90	88	Sunderland	71	80	63
Chester District	88	95	81	Nottingham	70	78	62
London	86	90	83	Birmingham	69	74	63
Brighton	86	86	87	Manchester	69	82	55
Preston	86	83	90	Leeds	68	77	59
Southampton	86	86	86	Yarmouth	68	69	67
Bath	85	85	85	Liverpool	67	75	58
Derby	80	85	74	Macclesfield	67	77	57
York	80	85	75	Sheffield	66	74	57
Bristol	78	83	74	Gateshead	65	74	57
Hull	76	84	69	Salford	62	74	49
Newcastle-on-Tyne	75	82	69	Stockport	60	73	46
Norwich	74	79	69	Bradford	59	75	43
Plymouth	74	79	70	Bolton	56	71	41
				Wolverhampton	55	60	49
				Oldham	53	70	36
				Blackburn	52	70	34

“The difference of education among the women is far greater than among the men. The *men* only vary from 60 in Wolverhampton to 95 in Chester (58 per cent.), while the *women* vary 160 per cent., viz., from 34 in Blackburn to 90 in Preston, and 89 in Cheltenham.

“The textile districts are worst as to women, Blackburn having only 34, Oldham 36, Bolton 41, Bradford 45; and if we omit Wolverhampton, they are worst as to men also. It is disappointing to find that the Factory Act, which shortens the children’s hours of labour, and exacts education, should have done so little. Still it may be asked—What would have been the state of things without the Act?

“It is agreeable to see that the pleasure-seeking places are high, as Cheltenham, Brighton, Bath. Many old historical towns are high, as Portsmouth, London, Preston, Southampton, Derby, York, Bristol, Hull. More modern places, with a fast increasing population, have great difficulties to meet. Churches and schools are not built in advance, but always lag behind, and in the meantime the children are neglected.

“The hardware towns have no Factory Act to compel attendance at school; yet their position is at least as good as that of the Lancashire and Yorkshire towns; for Birmingham equals Manchester, and is just above Leeds; Sheffield is above Salford, Bradford, and others; and even Wolverhampton surpasses Oldham and Blackburn. There is one great difference, however—that in the textile districts the women are strikingly below the men, Blackburn having only 34 women for 70 men, a difference of 36; and even Manchester having only 55 women for 80 men, a difference of 25; whereas, in Birmingham the difference between the sexes is only 9; in Wolverhampton, 11; and in Sheffield, 17.

“Liverpool is higher than we should have expected, remembering its bad condition as to mortality and crime. It has been suggested that the lowest people there—the Irish—have been educated at home under the National System.

“Chester and Portsmouth are singularly high; so is Coventry, as a place employing great numbers of women; and Leicester and Nottingham are in the same category.

“Preston we are accustomed to think of as a mere manufacturing place. We should not, therefore, have anticipated its position near the head of the list; but should have rather looked for it at the other end, near Bradford and Bolton. Preston, however, is an ancient place, recorded as formerly ‘the genteelest town in Lancashire,’ and has not increased very fast.” * * * * *

II.—*Post Office Savings Banks.*

THE subjoined extract from the last report of the Registrar of Friendly Societies in England, affords satisfactory evidence of the favour which the Postal Banks have been looked upon by the public.

“The Post Office Banks continue to progress most satisfactorily. Commencing on the 16th September, 1861, with 301 banks, their number has gradually increased until it has now reached 3,064. These banks are spread over all parts of the United Kingdom, and they are open daily for from six to eight hours, for the transaction of business.

“From their commencement, in September, 1861, these banks have opened accounts with more than 500,000 depositors, and they have closed about 112,000 accounts.

“They have received 2,130,000 deposits, amounting (with interest) to 6,940,000*l.*, and they have repaid 2,452,000*l.* in 460,000 sums.

“Out of nearly 7,000,000*l.* sterling paid into these savings banks, only 1,100,000*l.* has been transferred from the older savings banks, so that it is obvious that the post office banks have created an almost entirely new business, and by the facilities which they have provided for the public in every town and village in the

United Kingdom, they have induced large numbers of people to become depositors who had no opportunity of doing so before the establishment of the postal banks.

“The following document is a remarkable one, exhibiting the enormous amount of business transacted in so short a space of time by these banks; but it is especially remarkable for exhibiting the fact that this gigantic organisation has been established and carried on at a profit, after paying and providing for all its expenses.

“An account of all deposits received and paid under the authority of the Act 24 Vict., cap. 14, during the year ended 31st December, 1863, and of the expenses incurred from the commencement of business, on 16th September, 1861, to 31st December, 1863, together with a statement of the total amount due at the close of the year 1863 to all depositors.”

(A.)—*Account of all Deposits received and paid from 1st January to 31st December, 1863.*

	£		£
Balance brought forward	1,698,302	By repayments from 1st January to 31st December, 1863, viz.:—	£
To cash received from depositors from 1st January, to 31st December, 1863	2,649,919	Cash paid	1,017,494
	<hr/>	Warrants issued but not cashed at date.....	8,713
	4,348,221		<hr/>
To interest thereon up to 31st December, 1863, computed according to 7th and 8th sections of the above-cited Act, and added to the principal money of the said department....	54,814	Balance due, at the close of the year 1863, to all depositors, inclusive of interest to 31st December, 1863	1,026,207
	<hr/>		<hr/>
	4,403,035		3,376,828
			<hr/>
			4,403,035

(B.)—*Explanation of Balance.*

	£
Balance due at the close of the year to all depositors	3,376,828
	<hr/>
Moneys remitted to the Commissioners for the Reduction of the National Debt, from 16th September, 1861, to 31st December, 1862	£ 1,634,967
Ditto ditto from 1st January to 31st December, 1863	1,611,945
	<hr/>
	3,246,912
Amount transferred from Post Office Savings Banks, and which has been written off the account of Post Office Savings Banks at the National Debt Office, during the period from 16th September, 1861, to 31st December, 1862.	£ 267
Ditto ditto during the year ended 31st December, 1863	1,039
	<hr/>
	1,306
Net amount lodged with the Commissioners for the Reduction of the National Debt for investment	3,245,606
Add—	
Interest accruing to depositors up to 31st December, 1863, including the interest which accrued up to the 31st December, 1862	76,826
Balance remaining on 31st December, 1863, to be paid over for investment	54,396
	<hr/>
	3,376,828

(C.)—Account of Charges of Management and of Expenses incurred for Post Office Savings Banks, from their Establishment on the 16th September, 1861, to the 31st December, 1863.

	£
Charges and expenses for the period, from 16th September, 1861, to } 31st December, 1862	20,591
Charges and expenses for the year ended 31st December, 1863.....	25,401*
	<hr/> 45,992

Since this report was published, a very full return, moved for by Mr. Baines, has been laid before Parliament. This brings the information down to the end of March last. An abstract taken from this paper follows :—

	Number of Depositors' Accounts open on the 31st March, 1864.	Deposits.		Withdrawals.		Amount of Balances remaining at Credit of Depositors' Accounts.
		Number.	Amount.	Number.	Amount.	
			£		£	£
England	327,346	1,556,202	5,352,250	315,595	1,652,074	3,700,176
Wales	11,551	65,420	174,325	8,964	53,295	121,029
England } and Wales }	338,897	1,621,622	5,526,575	324,559	1,705,369	3,821,205
Islands.....	736	3,797	10,829	579	3,230	7,598
Scotland	18,683	91,386	168,444	16,126	60,512	107,931
Ireland	14,639	78,369	249,926	16,212	89,170	160,756
Total.....	372,955	1,795,174	5,955,774	357,476	1,858,282	4,097,492

III.—Strikes in the Manufacturing Districts.

THE history of Strikes continues to be the history of hopeless struggles, engendered of that ignorance of the plainest economic laws which the working classes of this country usually betray when they engage in these wasteful conflicts. The narrative of the recent Staffordshire Strike is written by one of the correspondents of the *Manchester Guardian*, and appeared in that paper upon the 26th October last ; and the extracts which follow it have been taken from letters to the *Manchester City Press*, written by Dr. John Watts :—

“ Much confusion exists in the minds of many persons as to the cause of this strike. During last winter the trade of South Staffordshire and East Worcestershire in coal and iron improved very rapidly, and the masters at once put up the

* This sum does not include the allowances to postmasters, letter-receivers, and others, for conducting savings bank business during the year ending 31st December, 1863, the rate of remuneration not being finally settled.

prices of their respective commodities. Three advances took place in the price of thick coal, making a total rise of 3*s.* a ton. Following the usual custom, wages were increased 6*d.* a-day simultaneously with each rise of 1*s.* a ton in coal. The first advance took place in September, and the second in October of last year. The third occurred in January of this year, when the price of thick coal stood at 11*s.* a ton, and wages at 5*s.* a-day; thin coal 10*s.* a ton, and wages 3*s.* 6*d.* At this level coal and wages stood, until a little beyond the middle of last June, when it was found that the market would no longer bear such high rates, and that iron also must come down. In consequence, notice was given to the workers in thick coal, announcing that their wages would be brought back to the point at which they stood before the rise in January, namely—thick-coal workers, 4*s.* 6*d.*, and thin-coal workers, 3*s.* 3*d.* At the same time the price of thick coal was declared down 1*s.* and thin coal 1*s.*—making the former 10*s.* and the latter 9*s.* a ton. Simultaneously, also, by the independent action of one firm (Mr. W. O. Foster, M.P.), known by the trading title of John Bradley and Co., finished iron was declared down 1*l.* a ton; and Mr. Foster was enabled to take this course because certain of the pig makers had also reduced the price of the raw material. It had always been customary for the wages of the miners to follow the direction taken by the prices of finished iron, in the proportions, for the workers in the thick and thin coal respectively, which we have just given.

“It had, however, been the usual practice to reduce at the same time the wages of the puddlers, rollers, and others employed in the making of finished iron, in the proportion of 1*s.* a ton with every fall of 1*l.* in finished iron. This practice was not adopted on this occasion. Notice for a reduction in wages was given to the miners, but no notice was given to the ironworkers. This was thought to be the more extraordinary, inasmuch as the proportion between the wages of the ironworkers and the price of iron had recently gone up 1*s.* a ton in favour of the men. They would now, therefore, be left with an advantage of 2*s.* a ton, whilst it was proposed that the miners’ wages should be kept rigidly within the rule which had long prevailed. At the time high prices were being obtained for coal supplied to the domestic market and to the hardware manufacturers in Birmingham and elsewhere. Further, the men asked why the masters could not as well afford to give 5*s.* a-day now as in 1848, when coal was, they said, selling at as low a figure as now. It was further maintained that if the masters, while able to afford the loss of the ironworkers’ 1*s.*, were not able to afford the additional loss of the colliers’ 6*d.* and 3*d.* respectively, they ought in strict justice to have spread the reduction of the two smaller sums over both trades, and not to have confined it solely to one, and that the poorer of the two. Complaints were made of hardships to which they were exposed, arising out of the method of getting the coal by charter-masters, locally termed ‘butties.’ Many of these men keep beer-houses or public-houses and provision shops, and require their men to trade with them. Certain of these practices, it is alleged, are winked at by the masters. All these circumstances were discussed at the different Union lodges of the men, and the thick-coal workers resolved that they would not consent to the new terms which their masters proposed.

“On the 4th of July, just six years after they came out at the last general strike in 1858, the fortnight’s notice that the masters had given them was up, and the thick-coal men all turned out. For a time they were joined by the working engineers and by the men employed at the blast furnaces in the making of pig iron, but these, after a short struggle, gave up the contest, and resumed on the reduced terms, which were a reduction of 10 per cent. The thin-coal workers in the Bilston and Wolverhampton districts did not at first join the movement, for they accepted the reduction and were at work, when, by repeated entreaties on the part of the thick-coal men, they too were induced to come out, some of them without giving notice. This naturally led to magisterial proceedings, and the thin-coal men ultimately all went in, and gave notice. On the expiration of that notice they all came out; but they did not remain out more than a week, and three-fourths of them are now at work on masters’ terms. There are, however, many thin-coal men in the Brierley Hill district who remain on strike. It will therefore be seen, that the thick-coal men were the

first to object to the terms which the masters offered ; and the objection became most powerfully displayed among the men who were employed in the domestic trade at West Bromwich, and in the general trade about Dudley and Tipton. In the two latter districts the chief employer is the Earl of Dudley. Other masters took a similar course ; and, seeing that the men intended to stoutly contest the point, they began at once to make arrangements for getting supplies of coal, for carrying on the pig iron and the finished iron works respectively, from other districts. Lancashire, Derbyshire, North Staffordshire, and North and South Wales were at once applied to. The application met with a ready response, and so great was the demand that every description of waggon had to be used in which to bring the coal from those districts. The railway companies were ready to run as many special trains as the ordinary traffic would allow, and soon the enormous quantity of 10,000 tons of coal were being brought into Staffordshire every day. The Strike Committee attempted to cut off the supplies by sending delegates into the districts we have named, with a view to induce the colliers to refuse to get coal to be used in an attempt to defeat the men in Staffordshire. But the attempt was unsuccessful. The colliers at a distance did not believe that they had a right to dictate to their masters as to what market they should send their coal to, but were ready to contribute to the support of their brethren on strike. Simultaneously with this refusal on the part of the colliers at a distance, there were evidences at home of a want of unanimity. Men who felt that their masters would ultimately win the day returned to work in small numbers throughout the whole of the district. There were 30,000 out when the strike was at its height in the middle of September, but that number had fallen to about 18,000 in the middle of this month. To prevent these from going to work, morning meetings, at between four and five o'clock, were determined upon, and thence detachments moved off in different directions, headed by drums and whistles. Wherever men were met on the road going to work they were sure to be prevented from going down that day. Usually it did not require much persuasion to bring about such a result, but when that failed other means of a less agreeable character were resorted to, and when men succeeded in getting to work unobserved, they were met as they returned, and assailed with the usual epithets of 'black-leg,' and the like, the presence of the police as their guard notwithstanding. A few of the more desperate resorted, for the first time in the history of a colliers' strike in Staffordshire, to the throwing of rough hand grenades into the houses of a few of the men who had gone to work. As the threats became more and more vehement, the police had to interfere at the morning meetings, and such gatherings are now prohibited. As a result, the number of men who are going in is increasing, encouraged as they are by the presence of two troops of Lancers in the district ; who, headed by the Lord Lieutenant of the county, and by the stipendiary magistrate for South Staffordshire, made a second circuit of the leading roads round Dudley and Kingswinford yesterday morning, when a serious attack had been threatened upon some of the pitmen who have resumed work. The determination of the masters to defeat this combination is shown in the fact, that where they have to carry on their works with coal brought from a distance, they are paying between 4s. 6d. and 5s. more per ton than for the coal of their own district. This is brought about not so much by the difference in the price per ton, as in the difference in the weight at which the coal of both districts is respectively sold. In South Staffordshire the coal is sold in 'boats long weight,' and boats that are gauged to hold 22 tons not unfrequently carry from 24 to 29 tons, yet the buyer pays for only 22 tons. Nor is the 'butty' or the colliery proprietor paid for more ; and, notwithstanding the flagrant injustice of the practice, no stand has yet been made against it by the colliery proprietors as a class. All the coal brought by railway is bought 'short weight.' The great extra cost of making iron in South Staffordshire which results from using the coal of other districts will be seen more clearly when we state that, at the lowest computation, $2\frac{1}{2}$ tons of coal are required to make 1 ton of pig iron, and another $2\frac{1}{2}$ tons to convert that pig-iron into finished iron. Many of the ironmasters are, however, getting some little coal from their own district, and so are reducing the serious difference which would otherwise exist."

The following extracts have been taken from the *Manchester City Press*, to which a series of letters has been recently addressed by Dr. John Watts, under the title of "Trades' Unions and Strikes." That gentleman has sedulously laboured for some years to expose the ruinous proceedings followed by working men in the manufacturing districts to enforce their own views upon the masters in trade disputes; and everything which comes from his pen upon these topics is well deserving of attention.

The first illustration of the wastefulness of strikes, which Dr. Watts brings forward in his recent letters, is that at the building of the new prison, Manchester. It arose out of an alleged infringement of trade regulations on the part of the master's foreman:—

"The dispute commenced on the 11th of April, and on the 18th of June the bricklayers' society issued an advertisement to justify its own proceedings, and expressed a hope that their explanation would 'bespeak public sympathy and support.' The explanation of the bricklayers ends thus: 'While condemning every act of despotism or unwarrantable tyranny on the part either of employers or employés (friends or foes), we are yet determined to exhaust our every resource and unquestionable power in order to achieve the legitimate objects of our organisation, and preserve intact the true interests and privileges of our members, which are the indisputable interests of the working men of England.' Not being in possession of the rules of the bricklayers' society, we cannot, of course, say whether its objects are legitimate, but if the rules sanction the present proceedings, we have no hesitation in saying that they are very contrary to the interests of working men.

"In this case there have been only two matters in dispute—the question whether the employer, who engages and pays the labourers, shall assign their places at the work, and whether bricks shall be carried on men's shoulders or wheeled in barrows; and these two questions, as it seems to us, resolve themselves into one, and that one whether, by keeping up a full supply of material and by keen oversight, it is possible to get a little more than ordinary work per day accomplished."

The following is Dr. Watts' account of the pecuniary sacrifice which the men inflicted upon themselves by this strike:—

	£	s.	d.
14 bricklayers have been out of employ for 13 weeks, whose wages } would amount, at 33s. per week, to	300	6	—
16 labourers, at 21s.	218	8	—
59 joiners, at 28s. for 7 weeks	573	4	—
And they have been supported at an expense to their various } societies of not less than.....	300	—	—
Total	1,391	18	—

"They have cost the contractor a large sum in loss of time, and much more to supply their places; and now they have to go and seek work elsewhere, thus doubling the expense at which their places have been supplied. A reasonable estimate of the money loss makes it not less than 1,800l."

The "Leeds and Low Moor Lock-out" occurred in the iron trade; upon the fiscal loss of this struggle Dr. Watts remarks:—

"Now, let us direct attention to the pecuniary costs of this struggle, which has lasted twelve weeks. We are told that the persons engaged at Low Moor were 750, at Bowling 350, and at each of the other three places upwards of 150 each, making a gross total of 1,560. We are also told that hammermen earn from 2l. to 3l. per

week, and their labourers from 8s. to 16s. each; that puddlers earn from 30s. to 50s., and middle hands 18s., and boys from 7s. to 8s. each; that rolling mill men earn from 30s. to 80s. each per week. We are told that the Bowling men averaged from 56s. to 58s. each per week all round, and youths about 12s. The balance-sheet issued by the workmen up to 25th June states 936 men as then in receipt of relief. Let us assume the average wages at 28s., and we shall get the following result:—

	£	s.	d.
936 men, at 28s. per week for 12 weeks.....	15,764	16	—
Contributions from unions and the public to June 25th.....	6,746	2	3½
Allow same proportion to July 16th.....	2,248	14	1
<hr/>			
Workmens' loss up to date, being 2,063 <i>l.</i> 6s. per week	24,759	12	4½
Loss to employers, assuming capital at 150 <i>l.</i> per man, at 20 per } cent. per annum, one fourth of a year to date..... }	7,200	—	—
Loss to shopkeepers on 15,764 <i>l.</i> 16s. at 20 per cent gross	3,152	19	2½
Ditto on three-fourths of proprietors' profits	1,080	—	—
<hr/>			
Total immediate loss to society (being 3,016 <i>l.</i> per week so long } as the strike lasts)	36,192	11	6¾*

Add to this the loss to the future employment fund, being one-fourth of proprietors' profits (1,800*l.*), which is equal to the employment of 12 men for ever, and would pay 28s. per week wages each, which sum, capitalised at twenty years' purchase, is 17,472*l.* further loss to the workmen. The same process applied to one-fourth of shopkeepers' profits (which, if saved, would also increase the future employment fund), gives for result 10,192*l.*, making a total future loss of 27,664*l.* Or, put in another form, the proportion of lost profits which must have gone to the future employment fund is, in twelve weeks, equal to the permanent employment of nineteen men; and therefore every week of the strike lessens the demand for workmen by one seven-twelfths for ever. We need not pursue the calculation further. We know it is much below the mark, but the above loss is surely sufficient to put to the debit of John Marshall (the man whose folly caused the strike), who we see is not much less important than his namesake's (the great flax spinners of Leeds), although his results occupy a different side of the ledger, and people will not bless him for his work.

“But the serious man will not rest here; but will follow out the consequences to the colliers and iron-miners thrown idle by the lessened demand for their labour; and to the consequent reductions in wages and the strikes in those departments; and to the lessened demand for all textile fabrics to clothe the people thus thrown idle, until he will get an exemplification of the fact that any act, whether good or evil, exercises an influence wide as the world, and long as time. And if these men leave the country, the public loss goes on until another set of men have completed their education at the iron manufacture, and can efficiently supply the vacated places. If we had any influence with the employers we would beg of them to withdraw the ‘hated declaration,’ and to trust to other arguments to reform the workmen's trade societies; and, in the meantime, we beg to assure them that, whatever other success they may achieve, they will not get what they now aim at, however long the contest lasts.”

With regard to the great lock-out of the Yorkshire colliers, Dr. Watts has furnished particulars of the men's loss in wages in detail. Thus:—

* This strike lasted about 18 weeks, and therefore cost nearly 50 per cent. more than the total above named.

*Losses by the Colliers' Strike and Lock-out.**Workmen's Losses.*

	£	s.	d.	£	s.	d.
504 men, 23 weeks, at 22s. per week	12,751	4	—			
223 youths, 23 weeks, at 9s. per week	2,308	1	—			
2,736 men, 18 weeks, at 22s. per week	54,172	16	—			
1,210 youths, 18 weeks, at 9s. per week	9,801	—	—			
	<hr/>			79,033	1	—

Subscriptions—Societies and Public.

504 men, 23 weeks, at 5s. per week	2,898	—	—			
2,736 men, 18 weeks, at 5s. per week	12,312	—	—			
	<hr/>			15,210	—	—

Employers' Losses.

Capital, at 100l. per workman, 394,600l., 18 } weeks, at 15 per cent. per annum	20,488	16	9			
72,700l., at 5 per cent. per annum.....	1,048	11	1			
Rent and other payments out of capital, say 19 } weeks, at 5 per cent. per annum	7,209	—	9			
	<hr/>			28,746	8	7

Shopkeepers' Losses.

On workmen's wages, at 15 per cent. gross	11,855	—	—			
On three-quarters of employers' lost profits	2,422	19	—			
	<hr/>			14,277	19	—

Public Loss by Artificial Price of Coals.

272 getters, at 15 tons each per week, 23 weeks, } being 93,840 tons, say at 3d. per ton.....	1,092	—	—			
1,480 getters, 18 weeks, 399,600 tons, at 3d. per ton	4,995	—	—			
	<hr/>			6,087	—	—
				<hr/>		
				143,354	8	7

“The above figures may admit of some modification, but not to lessen the total. They are based on Mr. J. Holmes’ paper on the Yorkshire Strike and Lock-out, read at the Social Science Meeting, 1859; the numbers of men being increased in accordance with the increased trade, as shown in the reports of the colliery inspector. We have assumed the wages of men 2s. and of youths 1s. per week less than given by Mr. Holmes, and have taken his proportions of men and youths employed. We applied to the workmen for facts, but learned through a friend that they were too busy finding food for hungry women and children to attend to the collection of statistics. Now that the lock-out has terminated, and left them only the workpeople of the Oaks and High Royd collieries to provide for, probably a commentary on our statement will enable us to test its accuracy; meanwhile it will illustrate our principle. Society has lost 143,000l. experimenting on the possibility of securing 10 per cent. more out of the results of combined capital and labour to the workmen. Nineteen weeks’ wages and profits are gone in the attempt to get one-tenth more per week! Three years and forty-four weeks to work at the improved rate, if it had been secured, before there would have been a single penny gained! Where will hundreds of those workmen be before that time has elapsed? How many changes will have occurred to alter the state of the labour market and the rate of wages before that time? Wages were altered in 1853, and again in 1854, in the district of the lock-out. They then rested until 1858, when an attempted reduction of 15 per cent. produced a strike, which lasted from 3rd April till 7th October, and a lock-out from that time till the end of November. There was a six weeks’ strike in the Methley district in 1862, and a lock-out of sixteen weeks, affect-

ing about 1,500 men and youths, from June to November, 1863, followed by the present lock-out and strike of 23 weeks. Four general modifications of wages in eleven years, or one alteration in every two years and nine months on an average. Is it not clear that if the present strike had been won instead of lost, even winning would have been losing? If the future compares with the past, there would be another alteration above a year before the raised wages would make up the loss, without any reckoning for interest. But the battle is lost. The Oaks and High Royd pits are filled sufficiently for the present purposes of the employers, and the nett immediate results to the workmen are 79,000*l.* lost wages, 23 men and one woman in prison, and some hundreds of men left to wander the country in search of employment; wives and children are in rags; the shop scores will necessitate dearer goods for years to come, and in many cases death alone will pay the debts; whilst half a year of schooling in the streets will have done irremediable evil to the children. We do not expatiate on the losses of the masters, for capital can take care of itself; but we say boldly that this game of social warfare is a hazard which the workman cannot afford to play, for the odds are fearfully against him. First, he loses his present wages, and is reduced from independence to beggary, and thus loses his character also; then he injures his employers and the tradesmen with whom he deals, and these injuries return again upon himself. In this struggle, the employers and shopkeepers have lost 43,024*l.* Now, apart from this lock-out, it is probable that one-fourth of this amount would have been saved and added to the permanent working capital of the country, and in that case, at 100*l.* per man, would either have called into employment 94 additional workmen, or would have increased the competition amongst the employers for existing men, and thus have given a fair chance for a rise of wages. So that beyond the present loss to the workmen, the demand for 'hands' is less by 94 now and for ever than it would have been if the strike had not occurred."

Dr. Watts concludes the statistical portion of his labours with an account of the strike at the Durham Collieries in 1863-64, followed by a compendious summary of the losses entailed in this and the other conflicts which he has recently criticised.

Hunwick, West Hartlepool.—"One third of the men at this pit were thrown out by a rise in the floor of the pit, and refused to work in relays with the others, except at an extra price of 2*d.* per ton (afterwards reduced to 1*d.* per ton); they were offered 6*d.* per score (about three farthings per ton), but declined it. Fresh places were found for them at old prices, and they still refused to work because two men who had formed a deputation to the manager had been discharged. These two found work elsewhere, and after ten days' idleness, and the loss of some 30*s.* per man, they returned to work."

*Staffordshire Colliers.**—"On 23rd May about 1,500 colliers near Wolverhampton struck against a reduction of 3*d.* per day (about 7½ per cent.), and we believe

* This strike increased in proportions to about 10,000 men, and lasted about four months, when they returned to work on the masters' terms.

Let us assume 10 weeks for the whole number. Then—

	£
6,932 men, at 22 <i>s.</i> per week, for ten weeks	76,252
3,068 youths, at 9 <i>s.</i> " " "	13,806
Employers' loss, 100 <i>l.</i> per man, eight weeks, at 15 per cent.	23,076
Shopkeepers' losses on wages and three-fourths profits, } 15 per cent.	16,104
	<hr/>
	129,238

without reckoning for subscriptions to the men or loss to the public by extra price of coal.

they still remain out. If the strike was settled in favour of the men to-day, they would have to work 120 weeks to replace their present loss; but as the principal demand for coal is for the manufacture of iron, which is 10s. per ton lower than in January last, and in which trade there is also a pending strike against reduction, the chance for success is small indeed."

Wolverhampton Builders.—"On 20th June, the bricklayers' labourers were locked out on a demand for a rise of 2s. per week, and as the bricklayers refused to work with non-society labourers, they also came to a stand. We have not heard of any termination of the strike, and assuming the total number of men at 500, in a population of upwards of 100,000, and the average wages at 22s. each per week, the loss to society up to date will be 5,270l.

"Besides the strikes and lock-outs dealt with in our former articles and those above enumerated, there have been during the first seven months of this year strikes of the joiners at Liverpool and Huddersfield, the bricklayers at Stockton, the iron-moulders at Stockport, the wheelwrights and blacksmiths at Oldham, and of weavers at one or two mills at Blackburn. Of these we have not learned particulars, except of the joiners' strike at Huddersfield, which, tested by results, seems to have been the most sensible of all; for we are told that 140 men have left the town and got work elsewhere, leaving only ten men chargeable on the funds. The strike was for a reduction in the hours of labour from 58½ to 52½ per week, a little over ten per cent. in time, which is equal to 10 per cent. rise in money, so far as the employers are concerned. Now, if the 140 men who have left Huddersfield have gone direct into employment elsewhere on the improved terms, they have practically secured their object without a strike, and thereby proved the reasonableness of the demand. The element of folly is reduced to the ten men who remain chargeable, and who ought either to have followed the example of the 140, or to have remained at work at home. The difference in the effect upon the employers between the loss of 140 and 150 men would have been inappreciable, and the wages of ten men and the society's contribution would have been saved. We propose now to sum up the debit of seven months, so far as it has come under our observation, and we direct attention to the following table, which is modelled upon the plan illustrated and explained in previous articles:--

Manchester New Prison.

To the attempt to settle which labourer should head the pro- cession, and whether bricks should be carried or wheeled }	£	s.	d.
(To which sum add the capital necessary to employ 1½ men and their increase for ever.)	1,800	-	-

Leeds and Low Moor Lock-out.

To pay for the zeal of John Marshall in hunting up grievances	36,192	11	6
(And the employment for 12 men and their increase for ever.)			

The South Yorkshire Colliers.

To a failing attempt to get 10 per cent. rise in wages	143,349	-	-
(And the employment for 94 men and their increase for ever.)			

The Durham Colliers.

To the strike against "big filling and rocking" of tubs	50,860	10	-
(And the employment for 33 men and their increase for ever.)			

North Stafford Colliers and Ironstone Getters.

	£	s.	d.
To resistance to reduction and demand for increase of $12\frac{1}{2}$ per cent. payment on account.....	15,488	-	-
(And the employment for 11 men and their increase for ever.)			

Northop Hall Colliers.

To the gain of $12\frac{1}{2}$ per cent. in wages.....	3,059	7	-
(And the employment for $2\frac{1}{2}$ men and their increase for ever.)			

Newcastle Painters.

To a lost strike for $12\frac{1}{2}$ per cent. rise	3,212	-	-
---	-------	---	---

South Staffordshire Colliers.

To resistance to $7\frac{1}{2}$ per cent. reduction, payment on account	52,746	13	-
(And the employment for 17 men and their increase for ever.)			

Wolverhampton Bricklayers and Labourers.

To a strike for 11 per cent. rise to the bricklayers' labourers, } payment on account	5,270	5	-
(And the employment for $4\frac{1}{2}$ men and their increase for ever.)			
	284,978	6	-

"In round numbers, society has lost, from causes immediately within view, 285,000*l.* in seven months, and the future demand for labour is lessened by 175 men and their natural increase for ever, in these foolish disputes about the proportion in which the results of the application of labour and capital shall be divided.

"If the above picture be not attractive enough for working men, let us try another. The struggles alluded to in our former articles have involved 10,478 men and youths for an average of fifteen weeks, and have cost the nation directly 285,000*l.* One-half of this sum would have been paid in wages if the men had remained at work. Now, suppose it had been possible for the men to have continued at work—to have made the same sacrifices for economy which they have made to the folly of strikes—then these 10,478 workmen would, in fifteen weeks, have accumulated a fund which, at 100*l.* per head, would have given permanent employment at average wages to 1,425 men; and assuming profits to average 15 per cent., would have given them also 21,375 per annum in addition to their wages; or enough to add 214 men annually to the list of those who would thus have become their own employers. And this is the proper view for working men to take of the cost of a strike; ten thousand five hundred men in fifteen weeks voluntarily and recklessly throw away the independence of 1,425 men at once, together with the addition of 214 men annually for ever, simply because they are not pleased with their masters. And yet they imagine it possible to snatch an advantage thereby. It is a frenzy equalled only by that of the victim who throws himself under the car of Juggernaut to be crushed to death to please God, but is without the excuse arising from religious phrenzy, and without a shadow of advantage in any way."

IV.—*The Cost of the Cotton Famine in Relief to the Poor.*

The *Manchester Guardian* has very recently shown, from documents published by the Central Relief Committee, the extraordinary expenditure for maintaining the operatives and their families during two and a half years of the distress. The principal portion of that article is here reprinted :—

“ Mr. Maclure has performed a public service by issuing a very complete statement of the sums expended from the poor rates and from public subscriptions, in the cotton manufacturing districts, during the four parochial years ending at Lady-day last. We can now give something like a satisfactory answer to the question so often asked—What has been the entire cost of supporting the operatives in Lancashire through the famine? At least, for two years and a half, or so, of the distress. Beyond the in-maintenance and out-door relief administered by the guardians, Mr. Maclure informs us that there are other charges which go to make up the sum termed in the official accounts ‘relief to the poor,’ such as the maintenance of paupers in lunatic asylums; repayment of workhouse loan, salaries of officers, and other purposes immediately connected with relief. Remembering this, the whole charitable expenditure during the four years can be shown thus, for the twenty-eight distressed unions :—

Year ended Lady-day.	Total Expenditure. £
1861—Relief to the poor.....	313,135
’62 ,, 	355,160
’63 ,, 	£823,788
Expended by local committees	809,167
	————— 1,632,955
1864—Relief to the poor.....	758,980
,, committees.....	563,287
	————— 1,322,267

The figures tell us that the maximum distress was attained in the parochial year 1863, which exceeded the following year, comparing the expenditure from both sources, by 310,000*l.*

“ A more precise measure of the distress is obtained by using the figures which represent the cost of *personal* relief, *i.e.*, of supporting the poor in the workhouse, or in assisting them at their own abodes, because these charges fluctuate directly with the number of recipients. This *personal* relief, so to speak, and the sums distributed to the poor by the local relief committees, Mr. Maclure has exhibited in his fifth table for each union. With respect to fiscal pressure, the unions fall conveniently into three sections :—Two, Ashton-under-Lyne and Glossop, forming the first and most burdened; seven, Preston, Blackburn, Stockport, Haslingden, Oldham, Rochdale, and Burnley, constituting the second; and the remaining nineteen the third and least burdened section. On this principle the following table has been compiled. The year 1861, being entirely free of the cotton famine, is taken as a standard or average year; 1862 follows; the distress raised the guardians’ expenditure 40,000*l.* over 1861; in 1863 and 1864 the relief committees were in operation, and the excess of those years, 1,288,000*l.* and 950,000*l.*, is supplied from the rates and from private charity; the total excess for the three years being no less than 2,277,000*l.*

	Expended for In and Out-door Relief.	Excess of Expenditure over the Amount of 1861.			
	1861.	1862.	1863.	1864.	Total.
<i>First Section of Unions :</i>	£	£	£	£	£
Ashton-under-Lyne.....	6,341	2,089	194,487	174,240	370,816
Glossop.....	1,089	350	28,211	43,180	71,741
<i>Second Section of Unions :</i>					
Preston.....	12,312	7,277	129,221	102,937	239,435
Blackburn.....	9,247	4,578	107,244	58,456	170,278
Stockport.....	6,555	2,355	93,128	67,626	163,109
Haslingden.....	3,627	555	46,907	24,449	71,911
Oldham.....	7,976	1,238	67,155	47,867	116,260
Rochdale.....	8,674	1,439	76,851	48,492	126,782
Burnley.....	6,149	751	46,024	15,910	62,685
<i>Third Section of Unions :</i>					
Manchester.....	28,878	8,871	164,582	84,808	258,261
Wigan.....	9,146	561	49,188	41,878	91,627
Todmorden.....	3,417	170	15,614	9,186	24,970
Chorley.....	4,414	793	22,584	14,656	13,033
Salford.....	9,057	1,882	44,386	31,709	77,977
Warrington.....	5,864	736	4,612	2,896	8,244
Bury.....	8,351	990	41,535	53,619	96,153
Chorlton.....	11,142	600	58,536	59,746	118,882
Bolton.....	12,198	1,416	32,952	29,487	63,855
Macclesfield.....	8,197	1,828	15,943	8,455	26,226
Saddleworth.....	1,382	140	4,159	5,331	9,630
Barton-upon-Irwell.....	3,411	215	9,792	3,645	13,652
Clitheroe.....	2,799	173*	5,186	2,095	7,281
Prestwich.....	2,210	465	12,924	9,029	22,418
Skipton.....	6,503	534	5,138	1,845	7,517
Leigh.....	3,216	245	4,942	3,110	8,297
Lancaster.....	3,354	30*	3,146	1,998	5,144
Garstang.....	2,356	140	1,169	1,126	2,435
The Fylde.....	3,236	197	1,981	1,768	3,946

* Less.

Note.—In 1863 and 1864, the local committees' expenditure is added to the maintenance and out-door relief by the guardians.

“Mr. Maclure has computed for the first four tables of his report the rate in the pound of the guardians' expenditure on in-door and out-door relief, and in addition for 1863 and 1864 the rate, upon the same basis (the parochial assessments of 1861), of the expenditure of the local relief committees. By this method we ascertain the pressure which has been removed from the ratepayers by the public subscriptions, on the supposition that the whole sum could have been raised from the rates.

“In the subjoined list the unions are placed according to the rate attained in the *maximum* year 1863. In two unions the rate exceeded 10s. in the pound; in nine it ranged between 5s. and 10s.; and in nineteen under 5s.; the lowest being only 10½d. The assessment of each union is set out in Mr. Maclure's report with a total of 6,030,000l. We believe this amount is by no means exaggerated. In some of

the new valuations we observe the sums are over those here given. For example, the Fylde union is 24,000*l.*, and the Warrington union 26,000*l.* beyond the figures upon which Mr. Maclure's ratios are calculated. Though 1862 felt the incipient calamity of the cotton famine, it was not sufficiently marked to destroy it as a standard year, for which purpose it is employed in the next table.

Rate in the Pound of Guardians' Expenditure for In and Out-door Relief, and of Local Committees' Disbursements.

	1862.		1863.		1864.	
<i>Two Unions over 10<i>s.</i> in the pound:</i>	<i>s.</i>	<i>d.</i>	<i>s.</i>	<i>d.</i>	<i>s.</i>	<i>d.</i>
Ashton-under-Lyne	—	6 $\frac{3}{8}$	12	10 $\frac{7}{8}$	11	6
Glossop	—	6 $\frac{1}{2}$	10	9 $\frac{5}{8}$	16	7
<i>Seven Unions over 5<i>s.</i> and under 10<i>s.</i> in the pound:</i>						
Preston	1	2 $\frac{1}{8}$	8	6 $\frac{2}{3}$	6	11 $\frac{1}{4}$
Blackburn	1	— $\frac{1}{8}$	8	6 $\frac{1}{2}$	4	11 $\frac{1}{2}$
Stockport	—	8 $\frac{7}{8}$	8	1 $\frac{1}{3}$	6	18 $\frac{3}{8}$
Haslingden	—	7	7	—	3	10 $\frac{7}{8}$
Oldham	—	9 $\frac{3}{4}$	6	7 $\frac{5}{8}$	4	11 $\frac{1}{8}$
Rochdale	—	9 $\frac{1}{2}$	5	11 $\frac{1}{8}$	4	6 $\frac{1}{8}$
Burnley	—	8 $\frac{3}{4}$	5	7 $\frac{1}{4}$	2	4 $\frac{7}{8}$
<i>Nineteen Unions under 5<i>s.</i> in the pound:</i>						
Manchester	—	11 $\frac{3}{8}$	4	10 $\frac{3}{4}$	2	9 $\frac{1}{4}$
Wigan	—	8 $\frac{3}{4}$	4	5 $\frac{3}{8}$	3	10
Todmorden	—	9 $\frac{5}{8}$	4	3	2	9 $\frac{3}{4}$
Chorley	—	8 $\frac{3}{8}$	3	7 $\frac{1}{2}$	2	6 $\frac{1}{2}$
Salford	—	7 $\frac{3}{4}$	3	4 $\frac{3}{8}$	2	4 $\frac{1}{4}$
Warrington	—	10 $\frac{5}{8}$	3	2 $\frac{7}{8}$	1	2
Bury	—	6 $\frac{7}{8}$	3	— $\frac{7}{8}$	3	9
Chorlton	—	8 $\frac{3}{8}$	2	11 $\frac{1}{8}$	2	11 $\frac{1}{2}$
Bolton	—	9 $\frac{1}{8}$	2	6	2	4 $\frac{1}{4}$
Macclesfield	1	— $\frac{1}{8}$	2	5 $\frac{1}{4}$	1	8 $\frac{7}{8}$
Saddleworth	—	6 $\frac{3}{4}$	2	— $\frac{1}{4}$	2	5 $\frac{3}{4}$
Barton-upon-Irwell	—	6 $\frac{3}{8}$	1	11 $\frac{1}{4}$	1	— $\frac{3}{8}$
Clitheroe	—	6 $\frac{3}{4}$	1	8 $\frac{1}{4}$	1	1 $\frac{1}{4}$
Prestwich	—	3 $\frac{1}{2}$	1	7 $\frac{7}{8}$	1	2 $\frac{1}{4}$
Skipton	1	—	1	7 $\frac{5}{8}$	1	2
Leigh	—	7 $\frac{7}{8}$	1	6 $\frac{5}{8}$	1	2
Lancaster	—	7 $\frac{1}{2}$	1	2 $\frac{1}{2}$	1	—
Garstang	—	8 $\frac{1}{8}$	1	— $\frac{3}{8}$	—	11 $\frac{1}{8}$
The Fylde	—	7	—	10 $\frac{5}{8}$	—	9 $\frac{3}{4}$

“The expenditure of 1862 was entirely defrayed by the rates, and that of 1863 and 1864 by the local relief committees as well as the rates. Looking to the rates in the pound during the two famine years in separate unions, we notice that the *proportionate* alleviation to the ratepayer greatly varies. In the eight unions named below the proportion obtained from voluntary funds exceeds one-half in all cases, and in some approaches two-thirds of the full rate, taken upon an average of the two years.

The Average Rate in the Pound for In-door and Out-door Relief, and for the Local Committees' Disbursements in 1863 and 1864.

	Average Rate in the Pound from both sources.		Whereof was the Rate in the Pound of Voluntary Disbursements.	
	s.	d.	s.	d.
Glossop	13	8 ³ / ₈	8	8 ¹ / ₄
Ashton-under-Lyne	12	2 ³ / ₈	8	— ³ / ₈
Stockport	7	1 ¹ / ₄	5	— ³ / ₈
Blackburn	6	9	4	2 ¹ / ₂
Preston	7	9	3	11
Oldham	5	9 ³ / ₈	3	5 ¹ / ₂
Haslingden.....	5	5 ¹ / ₂	3	2
Wigan.....	4	1 ¹ / ₄	2	7 ¹ / ₂

“The rate in the pound for the ‘relief of the poor,’ which is administered by the boards of guardians during the famine, is thus given for each year :—

			Excess over the Rate of 1861.	
	s.	d.	s.	d.
1861.....	1	— ³ / ₈	—	—
’62.....	1	2 ¹ / ₄	—	1 ⁷ / ₈
’63.....	2	9 ³ / ₄	1	9 ³ / ₈
’64.....	2	6 ¹ / ₄	1	5 ⁷ / ₈

“Under this aspect, the rates over the whole district were 175 per cent. higher in 1863, and 150 per cent. in 1864, than in 1861. These measure the increased liabilities of the ratepayers arising from the distress.

* * * * *

“The excess for the half-year ended at Michaelmas last is estimated at 300,000*l.*; this, added to the sums for which there are actual returns, makes, in the words of the report, ‘a total excess of expenditure of 2,577,372*l.* in the three years and six months during which the present exceptional state of distress has continued.’ Besides this, it is stated upon estimate, ‘that no less a sum than 220,000*l.* was locally distributed in private charity, beyond the large amount voluntarily remitted by manufacturers and property owners for cottage rents.’ We may, therefore, consider that up to the present time the support of the poor thrown by the American war upon charity for their daily maintenance has caused an outlay of *three millions sterling.*”

* * * * *

In connexion with the expenditure for the support of the distressed during the cotton famine, the state of the Savings Banks accounts of Lancashire may be examined :—

Year ended 20th November	Number of Depositors.	Amount Due to Depositors at the end of each Year.
		£
1860.....	142,894	4,084,772
'61.....	142,736	4,125,151
'62.....	133,931	3,852,003
'63.....	134,701	3,842,891

But in comparing the two last years with the two first, the operations of the Post Office Savings Banks must not be overlooked. These are the figures with respect to Lancashire :—

Years ended 31st March.	Number of Depositors.	Amount Due to Depositors at the end of each Year.
		£
1863.....	17,291	125,602
'64.....	22,731	193,226

If these amounts be added to the sums in the old banks in 1862-63, it will be found that those years were only on the average, below 1860-61 by 98,100*l.* each.

The twenty-eight cotton manufacturing unions contained at the Census of 1861, a population of 2,060,000 souls. The highest degree of pauperism was reached in the first week of December, 1862, when the total number of persons relieved from the poor's rate was 274,860. But the *maximum* of both classes of recipients, that is to say, those who were relieved from the subscriptions as well as from the rates, was not attained till three or four weeks subsequently, when the total, according to Mr. Maclure's Monthly Report, was 468,610.

From the most recent statement laid before the Central Relief Committee of Manchester, the succeeding table has been abstracted :—

	Number Relieved by Guardians (Out-door) only.	Number Relieved by both Guardians and Local Committees.	Number Relieved by Local Committees only.	Number Relieved by Guardians (In-door) only.	Total Number Relieved.
1863					
January.....	82,156	138,889	235,741	11,824	468,610*
1864					
January.....	90,730	22,965	69,657	12,764	196,116
February	89,975	40,431	73,238	12,604	216,248
March	80,387	37,288	64,177	11,849	193,701
April	70,062	28,837	49,730	11,086	159,715
May	63,646	19,992	29,980	10,641	124,459
June	61,648	16,495	22,718	10,485	111,346
July	55,865	13,522	16,523	10,385	96,295
August	56,625	11,808	14,630	10,298	93,361
September.....	61,083	14,475	16,821	10,623	103,002
October.....	75,538	19,299	41,431	11,558	147,826
November.....	79,562	17,335	53,026	12,067	161,990

* *Maximum* number relieved during the distress.

The distress showed itself early in 1862, and by Easter of that year had assumed very serious dimensions. Four or five of these unions are not in Lancashire ; the principal one is Stockport. The cotton factory statistics of Lancashire and Cheshire which follow, have been compiled from a return prepared for Parliament by the inspectors of factories. It relates to the spring of 1861 :—

Cotton Factories.	Number.	Number of Spindles.	Number of Power Looms.	Amount of Moving Power.	Total Numbers Employed.
Employed in spinning	853	12,599,754	—	86,605	91,210
„ weaving	590	—	119,605	14,573	58,289
„ spin- ning and weaving }	621	12,303,891	219,671	139,205	200,266
Other factories	127	—	—	2,335	6,731
Total	2,191	24,903,645	1,339,276	242,718	356,496

During the latter part of the distress, Mr. Maclure has collected returns of the state of employment in the mills ; the results, from July, 1863, to the present time, are given below :—

	Full Work.	Short Time.	Out of Work.*
1863			
July	235,827	121,718	178,205
August	242,446	118,900	171,535
September	267,962	104,198	160,835
October	266,401	106,857	154,219
November	248,824	116,615	159,117
December	238,278	116,412	149,038
1864			
January	210,739	125,856	158,653
July	292,448	67,660	101,568
August	299,229	59,074	102,090
September	212,520	102,047	135,821
October	155,170	125,296	171,568
November	210,554	94,084	153,295

* A large number of these persons are earning considerable, though irregular, wages from out-door and various casual occupations.

In ordinary times the burden of pauperism in the cotton manufacturing district is very light ; the usual amount may be taken as 50,000. The number of in-door and out-door paupers on the 1st January, 1861, when the mills were at full work, was 49,156.

In his last report to the Central Relief Committee, Mr. Maclure has shown the ratio of distressed persons, *i.e.*, those relieved by the guardians or by the local relief committees, or by both, for November, 1864 and 1861. The first column of ratios exhibits the proportion of recipients from both sources on the population of the respective unions ; the second column that of paupers only, as no other than the ordinary indigence of the district

had to be provided for in 1861. At the present time the distress has shrunk generally to one-third of its *maximum* amount.

Unions, &c.	Percentage of Distress in November, 1864.	Percentage of Pauperism in November, 1861.	Unions, &c.	Percentage of Distress in November, 1864.	Percentage of Pauperism in November, 1861.
Ashton	15·3	1·4	Leigh.....	2·7	1·9
Barton	3·1	1·7	Macclesfield	2·5	3·5
Blackburn.....	8·3	3·4	Manchester	4·9	2·5
Bolton	5·0	2·4	Oldham.....	8·2	1·5
Burnley.....	8·0	1·9	Preston	11·9	4·3
Bury	14·9	1·8	Prestwich	1·9	2·9
Chorley.....	5·9	3·2	Rochdale	6·8	2·2
Chorlton	3·4	1·2	Saddleworth....	5·3	1·3
Clitheroe	5·5	3·05	Salford	3·4	2·4
The Fylde.....	3·0	2·5	Skipton	6·1	6·7
Garstang	6·5	4·6	Stockport	9·1	1·8
Glossop	15·4	1·04	Todmorden	9·1	2·7
Haslingden	10·2	1·4	Warrington	3·3	2·6
Lancaster	3·8	3·8	Wigan	6·2	2·5

Those who had watched the police returns of Lancashire, during the pressure of the cotton famine, must have been gratified, though not surprised, by Mr. Justice Blackburn's remarks at the Manchester assizes.*

In his charge to the grand jury, he observed that—

“The charges which would be brought before the grand jury were certainly lighter in number and quality than he expected they would be. There was one other circumstance he might mention, as it had given him very great pleasure, and he was sure it would be a matter that the grand jury would be glad to hear. The factory operatives of this district had for a considerable time been placed under circumstances of great distress and privation. So far as he had observed the calendar, he had not seen a single charge connected with any of the distressed factory operatives. Though that class had been long suffering, so far as could be perceived by the calendar, no crime had been committed by them, a circumstance which led him to think highly of their respectability. He was prepared beforehand to find them a respectable class; but he nevertheless expected to discover that they had committed a few crimes; he, however, found that they had committed none.”

ED. S. J.

* 5th December, 1864.

MARRIAGES, BIRTHS, AND DEATHS IN THE
UNITED KINGDOM.

No. I.—ENGLAND AND WALES.

MARRIAGES IN THE QUARTER ENDED 30TH JUNE, 1864;
AND BIRTHS AND DEATHS IN THE QUARTER ENDED
30TH SEPTEMBER, 1864.

THIS Return comprises the BIRTHS and DEATHS registered by 2,200 Registrars in all the districts of England during the summer quarter that ended on September 30th, 1864; and the MARRIAGES in 12,692 churches or chapels, about 5,081 registered places of worship unconnected with the Established Church, and 641 Superintendent Registrars' offices, in the quarter that ended on June 30th, 1864.

The marriages in the spring quarter were very numerous; the births in the succeeding quarter rose in a still more remarkable degree. The aspect of the return was less satisfactory as regards the deaths, the number of which was greater than any previous summer number, except that of 1863, since the period of the last great cholera epidemic. The same statement is applicable to the deaths considered relatively to the population, as it was estimated for the successive summer quarters in which the deaths occurred.

ENGLAND :—MARRIAGES, BIRTHS, and DEATHS, returned in the Years
1858-64, and in the QUARTERS of those Years.

Calendar YEARS, 1858-64 :—Numbers.

Years	'64.	'63.	'62.	'61.	'60.	'59.	'58.
Marriages No.	—	173,388	164,030	163,706	170,156	167,723	156,070
Births..... „	—	729,399	712,684	696,406	684,048	689,881	655,481
Deaths..... „	—	475,582	436,566	435,114	422,721	440,781	449,656

QUARTERS of each Calendar Year, 1858-64.

(I.) MARRIAGES :—Numbers.

Qrs. ended last day of	'64.	'63.	'62.	'61.	'60.	'59.	'58.
March .....No.	37,948	35,454	33,953	33,274	35,150	35,382	29,918
June „	44,596	44,058	40,853	42,012	43,777	42,042	39,890
Septmbr..... „	—	41,902	40,600	39,884	40,541	39,803	38,599
Decmbr. „	—	51,974	48,624	48,536	50,688	50,496	47,663

QUARTERS of each Calendar Year, 1858-64

(II.) BIRTHS:—Numbers.

<i>Qrs. ended last day of</i>	'64.	'63.	'62.	'61.	'60.	'59.	'58.
March .....No.	192,926	186,653	181,990	172,933	183,180	175,532	170,959
June ,	188,641	189,611	185,554	184,820	174,028	175,864	169,115
Septmbr. ,	180,752	173,125	172,709	172,033	164,121	168,394	157,445
Decmbr. ,	—	180,010	172,431	166,620	162,719	170,091	157,962

(III.) DEATHS:—Numbers.

<i>Qrs. ended last day of</i>	'64.	'63.	'62.	'61.	'60.	'59.	'58.
March .....No.	143,030	128,524	122,019	121,215	122,617	121,580	125,819
June ,	116,899	118,375	107,392	107,558	110,869	105,631	107,142
Septmbr. ,	112,133	112,384	92,381	101,232	86,312	104,216	98,142
Decmbr. ,	—	116,299	114,774	105,109	102,923	109,354	118,553

MARRIAGES.—In the three months that ended June 30th the marriages were 44,596. In the same period of 1862 they were 40,853; in that of 1863 the number was 44,058. The increase in the present year is due chiefly to South Wales, Monmouthshire, Yorkshire, Cheshire, Lancashire, and Durham. It was for the most part in the more northern divisions of England.

London returned 7,694 marriages in the quarter; the north-western counties, which comprise Cheshire and Lancashire, and contain a population rather larger than that of the Metropolis, returned 7,147 marriages. This difference in the results is perhaps less than might be expected in two populations which present much dissimilarity in many and important points of view. The south-eastern counties and the south-western contain nearly equal populations, that of the latter division being rather less; and their marriage returns also closely agree, the numbers being respectively 3,618 and 3,583. But though the south midland counties have a larger population than the north midland, the marriages in the former are 2,159; those in the latter show a considerably higher number, namely, 2,931.

The marriage-rate in the quarter (*viz.*, proportion of persons married to 100 living) was 1·724, against an average of 1·689. In the June quarter of 1860 it rose to 1·766; in that of 1862 it fell to 1·614.

BIRTHS.—In the quarter that ended 30th September, 180,752 children were born, a number which exceeds that of the same period in 1862 by about 8,000, and that of 1863 by nearly the same amount. All the eleven divisions contributed to the increase. In London the births were about 25,000; in Cheshire and Lancashire about 28,000. In the south midland counties they were 10,815; in the north midland, with a less population, they were 11,314.

The births in Islington were 1,515, and those in Kensington were almost exactly the same number; but in 1861 the population of the former district was 155,000 while that of the latter was 186,000. Apparently the facts may be accepted as an indication of the rapid growth of building and population in Islington. The most populous of all the London districts is Pancras, in which about 200,000 persons are now living; and in the quarter it placed 1,826 births on the registers. The district of Marylebone returned 1,226 births, almost the same number as Halifax in Yorkshire, which, however, contained at the census a population less by 32,000 than the metropolitan district.

ENGLAND:—*Annual Rates per Cent. of PERSONS MARRIED, BIRTHS, and DEATHS, during the YEARS 1858-64, and the QUARTERS of those Years.*

Calendar YEARS, 1858-64:—General Percentage Results.

YEARS	'64.	Mean '54-'63.	'63.	'62.	'61.	'60.	'59.	'58.
Estmtd. Popln. } of England } in thousands } in middle of } each Year.... }	20,772	—	20,554	20,336	20,119	19,903	19,687	19,471
Persons Mar- } ried Per ct. }	—	1'661	1'688	1'614	1'628	1'710	1'704	1'604
Births ,	—	3'450	3'549	3'504	3'461	3'437	3'504	3'366
Deaths.... ,	—	2'214	2'314	2'147	2'163	2'124	2'239	2'309

QUARTERS of each Calendar Year, 1858-64.

(I.) PERSONS MARRIED :—*Percentages.*

<i>Qrs. ended last day of</i>	'64.	Mean '54-'63.	'63.	'62.	'61.	'60.	'59.	'58.
March....Per ct.	1'472	1'379	1'404	1'360	1'346	1'422	1'464	1'252
June..... ,	1'724	1'689	1'722	1'614	1'678	1'766	1'716	1'646
Septmbr. ,	—	1'597	1'616	1'582	1'570	1'614	1'602	1'570
Decmbr. ,	—	1'964	1'998	1'890	1'906	2'012	2'026	1'934

(II.) BIRTHS :—*Percentages.*

<i>Qrs. ended last day of</i>	'64.	Mean '54-'63.	'63.	'62.	'61.	'60.	'59.	'58.
March....Per ct.	3'740	3'605	3'698	3'644	3'500	3'707	3'631	3'576
June ,	3'647	3'611	3'705	3'665	3'690	3'512	3'588	3'486
Septmbr. ,	3'447	3'309	3'337	3'365	3'388	3'267	3'389	3'204
Decmbr. ,	—	3'273	3'461	3'350	3'272	3'230	3'414	3'205

(III.) DEATHS :—*Percentages.*

<i>Qrs. ended last day of</i>	'64.	Mean '54-'63.	'63.	'62.	'61.	'60.	'59.	'58.
March....Per ct.	2'773	2'490	2'546	2'443	2'453	2'481	2'515	2'631
June..... ,	2'260	2'187	2'313	2'121	2'147	2'237	2'155	2'210
Septmbr. ,	2'139	2'000	2'166	1'800	1'994	1'718	2'097	1'997
Decmbr. ,	—	2'180	2'236	2'230	2'064	2'043	2'195	2'406

The birth-rate was 3·447 per cent., against an average of 3·309. This result is very remarkable, for in the ten years 1854-63, there is no example of the birth-rate attaining a point as high as 3·4 per cent. in the summer quarter.

INCREASE OF POPULATION.—The deaths in the quarter ending 30th September were 112,133; and as the births in the same time were 180,752, the natural increase of the population was 68,619. People died at the rate of 1,219 daily; 1,965 children were born daily; and if the result were not continually subject to modification by immigration and emigration, the population would be augmented daily by 746 persons.

The number of emigrants in the quarter who left ports in the United Kingdom where emigration officers are stationed was 46,467.* The emigration, not only to the United States, but to all parts of the world, was less by nearly 12,000 than it had been in the same quarter of last year. To the United States there went 28,853 persons, and to the Australian colonies 11,241. Less than a fourth part of the emigration to the United States was of English origin; the Irish element constituted more than a half; Scotchmen and foreigners the remainder. The number that embarked at Liverpool, and which included persons of various origin, was to that which sailed from all other ports in the proportion of 27 to 19.

PRICES, PAUPERISM, AND THE WEATHER.—The average price of consols was as low as 89½. The price of wheat was 42s. 3d. per quarter, which is less than it was in the September quarter of 1863, and less by 14s. 7d. than it was in that of 1862. But beef and mutton showed no disposition to fall; and best potatoes at the Waterside Market, Southwark, were 5l. per ton, and were dearer than in the summer of 1863.

During the thirty-nine days which closed the spring quarter, the weather was cold, and it continued cold for the first sixteen days of July. A warm period then set in, and lasted twenty-five days; but again a cold period, extending from the 9th to the 28th of August, succeeded, during which, though the days were warm, the nights were very cold, almost to frost. Thereafter, warmth alternated with cold till the end of September.

The most remarkable feature in the meteorology of the quarter is the low degree of humidity of the air in August; it was only 65, the average being 77, and saturation being represented by 100. There is no previous instance on record of a humidity in August less than 69.

The mean temperature of the air in the quarter was 59°·4, which is slightly below the average. The pressure of the atmosphere was in excess in July and August, and slightly in defect in September. The rain-fall amounted to 4·5 in. in the three months, viz., 0·3 in. in July, the average being 2·7 in.; 1·4 in. in August, the average being 2·4 in.; and 2·8 in. in September, the average being 2·4 in. The whole quantity was 3 in., below the average.

In one instance only, viz., in 1847, has the fall of rain from the beginning of the year to the end of September been smaller in amount than it has been this year.

And if the period of twenty-one months ending 30th September is adopted as the basis of comparison, it will be found that the period which terminated on that date in the present year is the driest on record.

Mr. Glaisher, from whose remarks on the Greenwich observations the above facts are derived, adds: "The season was remarkable for its great dryness, particularly in August; for its ranges of temperature in that month, which extended in many inland places to 50°; and for its cold nights. Pastures were mostly bare at the end of that time; many ponds and wells dried up, and water sold in many places from 1d. to 3d. per bucket."

* Return with which the Registrar-General has been favoured by the Emigration Commissioners: of 46,467 emigrants the origin was undistinguished in 1,465 cases, which have been distributed by calculation.

CONSOLS, PROVISIONS, PAUPERISM, and TEMPERATURE, in each of the Nine
QUARTERS ended 30th September, 1864.

1	2	3	4		5	6	7		8	9
Quarters ending	Average Price of Consols (for Money).	Average Price of Wheat per Quarter in England and Wales.	Average Prices of Meat per lb. at Leadenhall and Newgate Markets (by the Carcase), with the <i>Mean</i> Prices.		Average Prices of Potatoes (York Regents) per Ton at Waterside Market, Southwark.	Pauperism.		Mean Tem- pera- ture.		
			Beef.	Mutton.		Quarterly Average of the Number of Paupers relieved on the <i>last day</i> of each week.	In-door.		Out-door.	
1862	£	<i>s. d.</i>	<i>d. d. d.</i>	<i>d. d. d.</i>	<i>s. s. s.</i>					
30 Sept.	93 $\frac{2}{8}$	56 10	4 $\frac{1}{4}$ —6 $\frac{1}{4}$ 5 $\frac{1}{4}$	5 $\frac{1}{4}$ —7 6 $\frac{1}{8}$	100—130 115	119,592	789,914	58.7		
31 Dec.	93 $\frac{5}{8}$	48 2	4—6 $\frac{1}{4}$ 5 $\frac{1}{8}$	5 $\frac{1}{4}$ —6 $\frac{3}{4}$ 6	90—110 100	132,663	907,493	45.0		
1863										
31 Mar.	92 $\frac{4}{8}$	46 7	4—6 $\frac{1}{4}$ 5 $\frac{1}{8}$	5—7 6	120—130 125	143,661	948,212	42.6		
30 June	93 $\frac{1}{8}$	46 2	4 $\frac{1}{4}$ —6 $\frac{1}{4}$ 5 $\frac{1}{4}$	4 $\frac{3}{4}$ —6 $\frac{3}{4}$ 5 $\frac{3}{4}$	110—130 120	127,852	879,241	53.0		
30 Sept.	93	45 7	4 $\frac{1}{2}$ —6 $\frac{1}{4}$ 5 $\frac{3}{8}$	4 $\frac{3}{4}$ —6 $\frac{3}{4}$ 5 $\frac{3}{4}$	70—105 87	120,189	819,795	58.8		
31 Dec.	92 $\frac{7}{8}$	40 6	4—6 $\frac{1}{4}$ 5 $\frac{1}{8}$	5—7 6	60—80 70	130,072	804,941	46.8		
1864										
31 Mar.	91	40 4	4 $\frac{1}{2}$ —6 $\frac{1}{2}$ 5 $\frac{1}{2}$	5 $\frac{1}{2}$ —7 6 $\frac{1}{4}$	55—70 62	139,606	855,728	37.9		
30 June	91 $\frac{4}{8}$	39 7	4 $\frac{1}{4}$ —6 $\frac{1}{4}$ 5 $\frac{1}{4}$	5 $\frac{1}{4}$ —7 6 $\frac{1}{8}$	40—60 50	122,717	785,825	53.1		
30 Sept.	89 $\frac{1}{8}$	42 3	4 $\frac{1}{2}$ —6 $\frac{1}{2}$ 5 $\frac{1}{2}$	5 $\frac{1}{2}$ —7 6 $\frac{1}{4}$	80—120 100	115,698	739,341	59.4		

DEATHS ; AND THE STATE OF THE PUBLIC HEALTH.—The deaths registered in the quarter were 112,133, of which 18,008 occurred in London ; 13,831 in the west midland counties, which include Gloucestershire, Herefordshire, Shropshire, Staffordshire, Worcestershire, Warwickshire ; 18,159 in Cheshire and Lancashire ; 12,508 in Yorkshire. Those four divisions are the most important, in respect to population, of the eleven groups of counties or parts of counties into which England and Wales are divided with a view to a general comparison of the returns.

The total number of deaths was almost the same as that of the September quarter of last year, but considerably more than in that of 1862. But though the last two summer quarters present the same aggregate result, they do not exhibit the same uniformity in detail. The returns of the late summer, as compared with those of 1863, are heavier in London, the west midland counties, Monmouthshire, and Wales ; lighter in the north-western counties, Yorkshire, Durham, Northumberland, Cumberland, and generally in other parts of England. In Suffolk the deaths declined from 1,850 to 1,425 ; in Cornwall from 2,037 to 1,680 ; in Gloucestershire from 2,606 to 2,254 ; in Lincolnshire from 1,953 to 1,764.

The annual rate of mortality for the quarter in England and Wales, was 2.139 per cent., against 2.000 as the average. With the exception of the summer

of last year, the death-rate was higher than in any previous corresponding season since the cholera summer of 1854.

The causes which operated to produce this excess were not confined to cities, but attacked town and country, and raised the deaths in both, in equal amounts, above their respective averages. The town and country rates of mortality were 2·374 and 1·831 per cent., against their averages 2·253 and 1·713.

Average Annual Rate of Mortality to 1,000 of the Population in the Eleven Divisions of England in the Ten Years 1851-60, and in the Winter, Spring and Summer Quarters of 1864.

Divisions.	Average Annual Rate of Mortality to 1,000 Living in the			
	Ten Years, 1851-60.	Winter Quarter, 1864.	Spring Quarter, 1864.	Summer Quarter, 1864.
I. London	23·63	30·88	23·53	24·06
II. South-Eastern counties ...	19·55	24·18	19·41	18·66
III. South Midland „ ...	20·44	26·53	21·61	20·43
IV. Eastern counties	20·58	24·51	21·25	19·05
V. South-Western counties ...	20·01	25·97	20·96	18·20
VI. West Midland „ ...	22·35	27·57	22·32	21·55
VII. North Midland „ ...	21·10	25·84	21·45	19·23
VIII. North-Western „ ...	25·51	30·97	24·76	23·22
IX. Yorkshire	23·09	28·31	24·55	23·66
X. Northern counties	21·99	25·18	21·95	21·14
XI. Monmouthshire and Wales	21·28	26·28	22·97	20·17

ANNUAL RATE of MORTALITY per Cent. in TOWN and COUNTRY DISTRICTS of ENGLAND in each Quarter of the Years 1864-62.

	Area in Statute Acres.	Population Enumerated.		Quarters ending	Annual Rate of Mortality per Cent. in each Quarter of the Years			
		1851.	1861.		1864.	Mean '54-63.	1863.	1862.
In 142 Districts, and 56 Sub-districts, comprising the Chief Towns.....	3,287,151	9,155,964	10,930,841	March	2·974	2·678	2·705	2·655
				June....	2·369	2·332	2·478	2·267
				Sept. ..	2·374	2·253	2·404	1·984
				Dec.	—	2·441	2·462	2·525
				Year ...	—	2·426	2·512	2·358
In the remaining Districts and Sub- districts of Eng- land and Wales, comprising chiefly Small Towns and Country Parishes	34,037,732	8,771,645	9,135,383	Year ...	—	1·974	2·064	1·890
				March	2·508	2·280	2·343	2·184
				June....	2·110	2·023	2·102	1·940
				Sept. ..	1·831	1·713	1·864	1·572
				Dec.	—	1·880	1·946	1·864

Note.—The three months January, February, March, contain 90, in leap year 91 days; the three months April, May, June, 91 days; each of the last two quarters of the year 92 days. For this inequality a correction has been made in the calculations, also for the difference between 365 and 365·25 days, and 366 and 365·25 days in leap year.

The mortality is lowest in the summer quarter. This rule holds invariably in England in ordinary seasons, and only fails to assert itself when malignant cholera, favoured by the heat of summer, rages over the country. But it is matter of interest to notice in the above table, that while it obtained as usual in ten of the great divisions of the kingdom, the rule did not hold good in London, where the mortality of the summer quarter was 2·406 per cent., and exceeded that of the preceding spring, when it was 2·353. The undue prevalence of diarrhoea or English cholera in London, from whatever cause it may arise, has made summer more fatal to children than spring. The deaths from that disorder last quarter in the Metropolis were 2,210; and in the ten years 1851-60, it was much more fatal there than in any other division except the north-western counties, Cheshire and Lancashire. The districts of the cotton manufacture have suffered greatly in former times from the complaint in question; and it may perhaps be accepted as a symptom of comparative exemption from it, and of improved sanitary condition, that the mortality per cent. was 2·322 against 2·476 in the spring months. Lancashire was at least as healthy as Yorkshire, in which the mortality of last summer was 2·366.

The healthiest of all the divisions was the south-western counties (Wiltshire, Dorsetshire, Devonshire, Cornwall, and Somersetshire), in which the death-rate was 1·820. It was but slightly higher (1·866) in the south-eastern portion of the island, or that which lies south of the Thames. From its minimum it ranged over the country, through various gradations, to its maximum, which was 2·406, and which prevailed in London.

It may be presumed that emigration from the north-western counties during the continued depression of their staple industry has confined the registration of deaths in those parts within narrower limits than it would otherwise have attained. That cause has no doubt had its effect; but the fact that the registration of births, simultaneously conducted, was not inactive, proves that it did not operate to an important extent.

The summer quarter of 1860 was distinguished by its wet, its cold, its want of sunshine, and generally by what is known as “bad weather;” it was distinguished also by a singularly low rate of mortality. In each month the mean temperature of the air was four degrees below its average, and 10 inches of rain fell. In the summer of the present year the monthly temperatures were near their averages; the amount of rain was less than 5 inches; and extremes of diurnal temperature were suffered, which had not been experienced in 1860. This brief statement of differences of meteorological constitution in the two seasons probably does not embrace all the influences that were at work; and when the records of the two entire years are completed, both for England and Scotland, an examination of the facts in more detail will be instructive; but the main result has been ascertained, and is sufficiently striking, namely, that under a higher but less uniform temperature, and an unusual defect of humidity, the deaths of last summer, which were 112,133, would have been only 89,336 under the rate of mortality that prevailed in 1860; and therefore 22,797 deaths occurred in England which would not have occurred if the season, in all its circumstances, had been as favourable to health as the summer of 1860.

Glendale in Northumberland is a model district in statistical tables; with Farnborough, Bellingham, and Rothbury, it stands a monument of salubrity, to which a sanitarian immediately turns, when he seeks a comparison or would direct an aim. In the ten years 1851-60, the average mortality of Glendale was only 15 deaths to 1,000 living. But the Registrar of Ford, one of its sub-districts, gives in his report a striking example of the natural advantages of a situation defeated by the apathy or ignorance of its inhabitants. When a village community abuses the patrimony which heaven has bestowed, and begins to suffer the effects, it is well if the minister, the surgeon, or other intelligent monitor, will step in to warn and advise.

ENGLAND: — MARRIAGES *Registered in Quarters ended 30th June, 1864-62; and BIRTHS and DEATHS in Quarters ended 30th September, 1864-62.*

1 DIVISIONS. (England and Wales.)	2 AREA in Statute Acres.	3 POPULATION, 1861. (Persons.)	4 5 6 MARRIAGES in Quarters ended 30th June,		
			'64.	'63.	'62.
			No.	No.	No.
ENGLD. & WALES.... Totals	37,324,883	20,066,224	44,596	44,058	40,853
I. London	77,997	2,803,989	7,694	7,790	7,209
II. South-Eastern	4,065,935	1,847,661	3,618	3,657	3,328
III. South Midland	3,201,290	1,295,497	2,159	2,092	1,976
IV. Eastern	3,214,099	1,142,580	1,699	1,661	1,551
V. South-Western	4,993,660	1,835,714	3,583	3,607	3,542
VI. West Midland	3,865,332	2,436,568	5,373	5,362	4,950
VII. North Midland	3,540,797	1,288,928	2,931	2,811	2,653
VIII. North-Western	2,000,227	2,935,540	7,147	7,000	6,401
IX. Yorkshire	3,654,636	2,015,541	4,642	4,532	4,159
X. Northern	3,492,322	1,151,372	2,866	2,750	2,590
XI. Monmthsh. & Wales	5,218,588	1,312,834	2,884	2,796	2,494

7 DIVISIONS. (England and Wales.)	8 9 10 BIRTHS in Quarters ended 30th September.			11 12 13 DEATHS in Quarters ended 30th September.		
	'64.	'63.	'62.	'64.	'63.	'62.
	No.	No.	No.	No.	No.	No.
ENGLD. & WALES.... Totals	180,752	173,125	172,709	112,133	112,384	92,381
I. London	24,955	24,254	23,253	18,008	17,105	15,418
II. South-Eastern	15,553	14,877	14,068	9,067	9,080	7,340
III. South Midland	10,815	10,566	10,411	6,781	7,044	5,353
IV. Eastern	9,391	8,738	8,976	5,532	6,014	4,692
V. South-Western	14,515	14,426	14,173	8,472	8,738	7,131
VI. West Midland	22,524	21,566	21,488	13,831	13,152	10,617
VII. North Midland	11,314	10,862	11,163	6,371	6,908	5,328
VIII. North-Western	28,199	26,679	28,029	18,159	18,700	15,291
IX. Yorkshire	19,927	18,837	18,887	12,508	12,781	10,161
X. Northern	11,996	11,200	11,046	6,500	6,820	5,458
XI. Monmthsh. & Wales	11,563	11,120	11,215	6,904	6,042	5,592

REMARKS ON THE WEATHER

DURING THE QUARTER ENDING 30TH SEPTEMBER, 1864.

By JAMES GLAISHER, ESQ., F.R.S., &c., Sec. of the British Meteorological Society.

For a period of 39 days preceding the close of the last quarter there was an average daily deficiency of $2\frac{1}{2}^{\circ}$ of temperature, and the present quarter opened with a continuation of the same weather, with somewhat increased intensity; the deficiency of temperature to the middle of July being as large as 3° daily on the average. On the 17th July a warm period set in and continued for 25 days, and the daily temperature was in excess to $3\frac{1}{4}^{\circ}$; this was succeeded by 20 days of very cold weather, viz., from 9th August to 28th August, whose average daily temperature was 4° in defect; and it is remarkable that this deficiency of temperature fell on the nights only, the days were of their average warmth, but the nights were very cold, causing the extremes of temperature to range from great heat by day to almost frost at night, and quite to frost on vegetation. A period of 12 days followed of warmth, the average daily temperature being $2\frac{3}{4}^{\circ}$ in excess; then the 10 days from September 10th to 20th, the temperature of the air was daily 2° below their average values, and the last 10 days of the quarter were in excess to $1\frac{1}{4}^{\circ}$ daily.

The mean temperature of July was $61\frac{3}{4}^{\circ}$, being $\frac{1}{4}^{\circ}$ above the average of the preceding 23 years, and but slightly different from that in 1863.

The mean temperature of August was $59^{\circ}6$, being $1^{\circ}8$ below the average of the preceding 23 years, and $1^{\circ}8$ colder than in 1863.

The mean temperature of September was $56^{\circ}9$, being of the same value as the average of preceding 23 years, and exactly the same as in 1863.

The temperature of the air increased from June to July by 3° or 4° generally over the country. August was colder than July by 2° generally; and the decline of temperature from August to September was from 1° to 3° at most places.

The mean high day temperatures in the months of July, August, and September were $51^{\circ}3$, $72^{\circ}8$, and $67^{\circ}3$, being $1^{\circ}7$ above in July, and of the same values as the average in August and September.

The mean low night temperatures in the months of July, August, and September were $51^{\circ}2$, $48^{\circ}5$, and $49^{\circ}1$, being $1^{\circ}7$ below in July, $4^{\circ}8$, below in August, and $0^{\circ}3$ above in September.

Therefore *the days* were of a little higher than their average temperature in July, of the same as their averages in August and September, whilst *the nights* in July were a little lower than the average temperature, were remarkably cold in August, and differed but little from their averages in September.

The mean temperature of the dew points were $2^{\circ}1$, $6^{\circ}3$, and $1^{\circ}2$ below their respective average. That in August was $47^{\circ}8$. The lowest before recorded was $51^{\circ}8$ on two or three occasions.

The degree of humidity of the air was very remarkable; it was 76, 65, and 77 for these three months; the averages are 76, 77, and 81, saturation being represented by 100. There is no other instance on record in the month of August of a humidity less than 69, which took place in 1849. In 1843 it was as high as 85.

The pressure of the atmosphere was in excess in the months of July and August, and slightly in defect in September. It increased from June to July by 0·02 inch at southern, increasing gradually in amount to 0·14 inch at northern stations; increased at all places from 0·06 inch to 0·08 inch from July to August, and decreased from August to September by 0·1 inch at southern stations, to 0·3 inch nearly at northern stations.

The fall of rain was in defect in July and August, and slightly in excess in September. It was 0·3 inch in July, being 2·4 inches in defect; 1·4 inch in August, being 1·0 inch deficient; and 2·8 inches in September, being 0·4 inch in excess.

In July, 1863, the fall was 0·9 inch; 1856 was 0·9 inch; 1847 was 0·7 inch; 1855 was 0·3 inch; 1832 was 0·7 inch; 1825 was 0·1 inch; and in 1818 was 0·8 inch. In all other Julys since 1815, the fall has exceeded 1 inch, and amounted to 7 inches in 1828. In August the fall in ten instances back to 1815, was less than in this year; the smallest was 0·1 inch in 1818, and 0·4 inch in 1819.

The mean temperature of the air at Greenwich in the three months ending August, constituting the three summer months, was 59°·6, being 0°·5 below the average of the preceding 93 years.

1864. Months.		Temperature of										Elastic Force of Vapour.		Weight of Vapour in a Cubic Foot of Air.	
		Air.			Evaporation.		Dew Point.		Air— Daily Range.		Water of the Thames				
		Mean.	Diff. from Aver- age of 93 Years.	Diff. from Aver- age of 23 Years.	Mean.	Diff. from Aver- age of 23 Years.	Mean.	Diff. from Aver- age of 23 Years.	Mean.	Diff. from Aver- age of 23 Years.		Mean.	Diff. from Aver- age of 23 Years.	Mean.	Diff. from Aver- age of 23 Years.
July	61·8	+0·4	+0·2	56·3	-1·0	51·6	-2·1	24·1	+3·4	64·1	·382	-·032	4·2	-0·4	
Aug.	59·6	-1·1	-1·8	53·3	-4·2	47·8	-6·3	24·3	+4·8	63·8	·333	-·089	3·7	-1·0	
Sept.	56·9	+0·5	0·0	53·2	-0·6	49·7	-1·2	18·2	-0·3	60·6	·357	-·022	4·0	-0·2	
Mean.....	59·4	-0·1	-0·5	54·3	-1·9	49·7	-3·3	22·2	+2·6	62·8	·357	-·048	4·9	-0·5	

1864. Months.		Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Hori- zontal Move- ment of the Air.	Reading of Thermometer on Grass.					
		Mean.	Diff. from Aver- age of 23 Years.	Mean.	Diff. from Aver- age of 23 Years.	Mean.	Diff. from Aver- age of 23 Years.	Amnt.	Diff. from Aver- age of 47 Years.		Number of Nights it was			Low- est Read- ing at Night.	High- est Read- ing at Night.	
											At or below 30°.	Be- tween 30° and 40°.	Above 40°.			
July	70	- 6		In. 29·856	+·055	Gr. 529	+ 1	In. 0·3	-2·4	Miles. 217	0	8	23	35·8	57·7	
Aug.	65	-12		29·918	+·129	533	+ 5	1·4	-1·0	195	4	12	15	27·2	54·2	
Sept.	77	- 4		29·777	-·042	533	- 1	2·8	+0·4	233	1	10	19	29·0	62·0	
Mean.....	71	- 7		29·850	+·047	532	+ 2	Sum 4·5	Sum -3·0	Mean 215	Sum 5	Sum 30	Sum 57	Lowest 27·2	Highest 62·0	

Note.—In reading this table it will be borne in mind that the sign (—) minus signifies below the average, and that the sign (+) plus signifies above the average.

ENGLAND:—Meteorological Table, Quarter ended 30th September, 1864.

1	2	3	4	5	6	7	8	9
NAMES OF STATIONS.	Mean Pressure of Dry Air reduced to the Level of the Sea.	Highest Reading of the Thermo- meter.	Lowest Reading of the Thermo- meter.	Range of Tem- perature in the Quarter.	Mean Monthly Range of Tem- perature.	Mean Daily Range of Tem- perature.	Mean Tem- perature of the Air.	Mean Degree of Hu- midity.
	in.	°	°	°	°	°	°	
Guernsey	29·630	72·5	50·0	22·5	20·0	9·1	58·5	85
Ventnor	29·668	72·0	45·0	27·0	33·3	10·0	60·8	77
Barnstaple	29·596	86·0	40·0	46·0	36·5	18·5	60·0	81
Royal Observatory	29·658	88·6	38·1	50·5	41·6	22·2	59·4	71
Royston	29·686	86·9	36·1	50·8	42·8	22·8	58·9	70
Lampeter	29·665	—	—	—	—	23·2	57·2	84
Norwich	29·622	83·7	41·5	41·2	34·3	15·6	59·6	75
Diss (Norfolk)	29·666	88·5	32·5	56·0	46·7	23·0	59·8	75
Liverpool	29·668	76·8	44·8	32·0	24·3	10·4	57·8	74
Belvoir Castle	29·538	85·0	33·0	52·0	42·3	21·2	57·5	77
Wakefield	29·593	82·7	30·0	52·7	45·7	21·0	57·4	82
Stonyhurst.....	29·582	80·0	36·0	44·0	37·9	17·7	54·9	82
York	29·561	80·0	35·5	44·5	35·0	15·3	—	—
North Shields	29·682	75·5	37·0	38·5	32·6	13·5	53·7	77

10	11	12	13	14	15	16	17	18
NAMES OF STATIONS.	WIND.					Mean Amount of Cloud.	RAIN.	
	Mean estimated Strength.	Relative Proportion of					Number of Days on which it fell.	Amount collected.
		N.	E.	S.	W.			
								in.
Guernsey	1·2	8	6	6	11	3·8	34	8·0
Ventnor	—	2	8	5	16	—	37	3·6
Barnstaple	—	5	6	7	13	3·1	41	7·4
Royal Observatory	0·2	6	4	9	12	6·0	24	4·4
Royston	—	9	2	8	12	5·1	34	2·8
Lampeter	0·5	5	6	9	11	4·8	—	—
Norwich	1·4	—	—	—	—	5·8	31	3·6
Diss (Norfolk)	1·6	4	5	4	13	5·0	27	2·9
Liverpool	—	5	4	9	13	5·6	—	—
Belvoir Castle	1·4	6	2	8	15	4·7	21	2·6
Wakefield	1·8	6	3	7	15	5·6	40	3·9
Stonyhurst.....	0·6	6	4	7	14	6·7	53	10·0
York	—	4	7	7	13	—	35	4·0
North Shields	1·9	8	4	6	13	5·4	54	4·0

No. II.—SCOTLAND.

MARRIAGES, BIRTHS, AND DEATHS IN THE QUARTER

ENDED 30TH SEPTEMBER, 1864.

BIRTHS.—27,063 births were registered in Scotland during the quarter ending 30th September, 1864, being in the annual proportion of 347 births in every 10,000 of the estimated population. This is the highest birth-rate which Scotland has ever exhibited during the corresponding quarter of the nine previous years, and is greatly above the mean average birth-rate of the quarter, which is only at the rate of 332 births in every 10,000 persons.

The town and rural districts exhibited the usual difference in the proportion of the births. Accordingly, the 126 town districts (which embrace all the towns with populations of 2,000 and upwards), registered 15,616 births, while the 884 rural districts (embracing the remainder of the population of Scotland), registered 11,447 births; thus indicating an annual proportion of 377 births in every 10,000 persons in the town districts, but only 313 births in a like population in the rural districts.

Of the 27,063 births, 24,351 were legitimate, and 2,712 illegitimate; being in the proportion of one illegitimate in every 9·9 births, or 10 per cent. of the births illegitimate. During the past quarter, the proportion of illegitimate births in the town and rural districts was exactly the same, viz., 10 per cent. of the total births. Table I. exhibits the proportion of the illegitimate births in the several divisions and counties of Scotland, and generally accords with previous returns, the counties included in the north-eastern and southern divisions of Scotland exhibiting a much higher proportion of illegitimate births than any of the other divisions. Thus, while in the northern and north-western divisions respectively, only 6·7 and 6 per cent. of the births were illegitimate, and in the south-western division, the great centre of manufactures and mining, only 8·7 per cent. were illegitimate, 14·2 per cent. of the births were illegitimate in the southern, and 14·6 per cent. in the north-eastern division.

Of the children born during the quarter, 13,922 were boys, and 13,141 girls; being in the proportion of 106 boys for every 100 girls. 9,135 births were registered during July, 9,246 during August, and 8,682 during September,

TABLE I.—*Rates per Cent. of the Illegitimate Births in the Divisions and Counties of Scotland during the Quarter ending 30th September, 1864.*

Divisions.	Per Cent. of Illegitimate.	Counties.	Per Cent. of Illegitimate.	Counties.	Per Cent. of Illegitimate.	Counties.	Per Cent. of Illegitimate.
SCOTLAND	10·0						
Northern	6·7	Shetland	5·6	Forfar	13·7	Lanark	8·3
North-Western ..	6·0	Orkney	6·2	Perth	11·5	Linlithgow ..	9·8
North-Eastern ..	14·6	Caithness	8·6	Fife	6·9	Edinburgh ..	9·9
East Midland ..	11·0	Sutherland...	4·7	Kinross	13·2	Haddington ..	7·0
West Midland ..	8·6	Ross and } ..	5·8	Clackman- } ..	5·9	Berwick	6·9
South-Western ..	8·7	Cromarty } ..	5·8	nan	5·9	Peebles	9·4
South-Eastern ..	9·2	Inverness	6·3	Stirling	9·6	Selkirk	2·1
Southern	14·2	Nairn	11·3	Dumbarton ..	8·7	Roxburgh ..	13·0
		Elgin	15·6	Argyll	7·0	Dumfries	12·8
		Banff	15·9	Bute	7·1	Kirkcud- } ..	15·2
		Aberdeen	14·5	Renfrew	8·7	bright .. } ..	15·2
		Kincardine....	12·7	Ayr	10·6	Wigtown	19·2

DEATHS.—16,131 deaths were registered in Scotland during the quarter ending 30th September, 1864, being in the annual proportion of 206 deaths in every 10,000 persons of the estimated population. The average proportion of deaths during that quarter for the nine previous years was only 184 in every 10,000 persons, so that the mortality during the past quarter, like that of the previous one, has been excessively high.

Rather more than the usual difference in the mortality in the town and rural districts was observed. Thus, in the 126 town districts (embracing all the towns with populations exceeding 2,000 persons), 10,417 deaths were registered; whereas in the 884 rural districts (including the rest of Scotland), only 5,714 deaths occurred; giving the high proportion for the quarter of 251 deaths in every 10,000 persons in the towns; but only 156 deaths in a like population in the rural districts.

5,461 deaths were registered in July, 5,608 in August, and 5,062 in September; thus giving the proportion of 176 deaths daily during July, 181 daily during August, and 169 daily during September.

INCREASE OF THE POPULATION.—As the births numbered 27,063, and the deaths 16,131, the natural increase of the population during the quarter, through the excess of births over deaths, amounted to 10,932 persons. From a return furnished to the Registrar-General by the Emigration Commissioners, it appears that 46,467 persons emigrated from the ports of Great Britain and Ireland during the quarter ending 30th September, 1864. Of these 4,757 were ascertained to have been of Scottish origin; and if 154 be added to that number as the proportion of persons whose origin was not ascertained, the total ascertained Scottish emigrants during the quarter would amount to 4,911 persons. That number deducted from the excess of births over deaths would leave 6,021 as the increase of the population during the quarter, making no allowance, however, for migration to England or Ireland, nor for drafts to the army, navy, and merchant shipping.

TABLE II.—*Number of Births, Deaths, and Marriages in Scotland, and in the Town and Country Districts during the Quarter ending 30th September, 1864, and their Proportion to the Population; also the Number of Illegitimate Births, and their Proportion to the Total Births.*

	Population.		Total Births.			Illegitimate Births.		
	Census, 1861.	Estimated, 1864.	Number.	Per Cent.	Ratio. One in every	Number.	Per Cent.	Ratio. One in every
SCOTLAND	3,062,294	3,118,701	27,063	3·47	28	2,712	10·0	9·9
126 town districts	1,603,875	1,656,132	15,616	3·77	26	1,563	10·0	9·9
884 rural ,,	1,458,419	1,462,569	11,447	3·13	31	1,149	10·0	9·9

	Population.		Deaths.			Marriages.		
	Census, 1861.	Estimated, 1864.	Number.	Per Cent.	Ratio. One in every	Number.	Per Cent.	Ratio. One in every
SCOTLAND	3,062,294	3,118,701	16,131	2·06	44	4,993	0·64	156
126 town districts	1,603,875	1,656,132	10,417	2·51	39	3,546	0·85	116
884 rural ,,	1,458,419	1,462,569	5,714	1·56	64	1,447	0·39	252

TABLE III.—*Number of Births, Deaths, and Marriages in Scotland, and their each Quarter of the Years*

	1855.		1856.		1857.		1858.		1859.	
	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.
<i>1st Quarter—</i>										
Births	19,605	2·64	25,129	3·37	26,010	3·47	26,022	3·45	25,988	3·42
Deaths	19,559	2·64	16,018	2·15	16,684	2·22	17,321	2·29	17,102	2·25
Marriages ..	3,931	0·53	4,499	0·60	4,988	0·66	4,486	0·59	4,890	0·64
<i>2nd Quarter—</i>										
Births	25,402	3·43	26,848	3·60	27,381	3·65	27,846	3·69	28,510	3·76
Deaths	15,324	2·06	14,684	1·97	15,526	2·07	15,657	2·07	15,653	2·06
Marriages ..	5,131	0·69	5,241	0·70	5,435	0·72	4,927	0·65	5,150	0·67
<i>3rd Quarter—</i>										
Births	23,818	3·21	24,636	3·30	24,856	3·31	24,905	3·30	25,956	3·42
Deaths	12,968	1·75	12,861	1·72	14,713	1·96	14,012	1·85	13,340	1·76
Marriages ..	4,195	0·56	4,549	0·61	4,470	0·59	4,081	0·54	4,626	0·61
<i>4th Quarter—</i>										
Births	24,524	3·31	25,208	3·38	25,168	3·35	25,245	3·34	26,089	3·44
Deaths	14,153	1·91	14,966	2·00	14,983	2·00	16,549	2·19	15,619	2·06
Marriages ..	6,423	0·86	6,451	0·86	6,476	0·86	6,161	0·81	6,535	0·86
<i>Year—</i>										
Population.	2,962,500		2,979,855		2,997,210		3,014,565		3,031,921	
Births	93,349	3·15	101,821	3·41	103,415	3·45	104,018	3·45	106,543	3·51
Deaths	62,004	2·09	58,529	1·96	61,906	2·06	63,539	2·10	61,714	2·03
Marriages ..	19,680	0·66	20,740	0·69	21,369	0·71	19,655	0·65	21,201	0·69

MARRIAGES.—4,993 marriages were registered in Scotland during the third quarter of the year 1864, being in the annual proportion of 64 marriages in every 10,000 persons of the estimated population. This is a proportion greatly above the average of the quarter during the nine previous years, which only gives a proportion of 58 marriages in every 10,000 persons. This high proportion of marriages speaks well for the general commercial prosperity of the country; though it must also be taken into account that the high mortality which has prevailed during the whole of the year, by making way for new families, would also tend to increase the number of marriages.

The increase in the proportion of marriages was most remarkable in the towns. Thus, in the 126 town districts 3,546 marriages were recorded, but only 1,447 in the 884 rural districts;—thus indicating a marriage-rate in the towns equal to 85 marriages in every 10,000 persons of the estimated population, but only 39 marriages in an equal population in the rural districts.

HEALTH OF THE POPULATION.—To whatever cause it may be attributed, the health of the population has been below the average, while the amount of sickness and the proportion of deaths have been high, and seem to be on the increase. The increase of sickness and of death seems to have been most marked in the town districts; it has not, however, been confined to the past quarter, but has extended to every month of the present year. This increase, so far as it can be traced, has not been caused by the special prevalence of any epidemic, but by the general increase

Proportion to the Population, Estimated to the Middle of each Year, during 1855 to 1864 inclusive.

1860.		1861.		1862.		1863.		1864.		
Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	
27,118	3·55	25,425	3·31	27,107	3·51	26,729	3·44	28,177	3·61	1st Quarter— Births Deaths Marriages
20,223	2·65	17,929	2·33	19,412	2·51	19,227	2·47	22,576	2·89	
4,802	0·63	4,619	0·60	4,750	0·61	5,090	0·65	5,333	0·68	
28,292	3·71	29,200	3·80	28,745	3·73	29,651	3·82	29,992	3·84	2nd Quarter— Births Deaths Marriages
18,182	2·38	15,934	2·07	17,382	2·25	17,947	2·31	18,445	2·36	
5,329	0·69	5,310	0·69	5,172	0·67	5,557	0·71	5,710	0·73	
24,914	3·26	26,146	3·41	25,798	3·34	26,362	3·40	27,063	3·47	3rd Quarter— Births Deaths Marriages
13,875	1·82	13,402	1·74	14,227	1·84	16,249	2·09	16,131	2·06	
4,514	0·59	4,463	0·58	4,558	0·59	4,863	0·62	4,993	0·64	
25,305	3·31	26,265	3·42	25,484	3·30	26,583	3·42	—	—	4th Quarter— Births Deaths Marriages
15,890	2·08	15,022	1·95	16,145	2·09	17,998	2·32	—	—	
6,580	0·86	6,436	0·84	6,066	0·78	6,577	0·84	—	—	
3,049,277		3,066,633		3,083,989		3,101,345		3,118,701		Year— Population
105,629	3·46	107,036	3·49	107,138	3·47	109,325	3·52	—	—	Births Deaths Marriages
68,170	2·23	62,287	2·03	67,159	2·17	71,421	2·30	—	—	
21,225	0·69	20,828	0·67	20,544	0·66	22,087	0·71	—	—	

of deaths from all diseases ; and as the mortality seems to have been on the increase for a few years back, its probable causes merit a searching inquiry.

WEATHER.—The weather has been in many respects anomalous, and presented a striking contrast to that which has prevailed over Scotland for some years back. During the first ten days of July, cold east winds prevailed, and exhibited the striking fact, that they commenced daily shortly after the sun rose, increased in strength till about three o'clock, died away to a perfect calm in the evening, and continued calm during the night. From the 11th till the close of July, the days were delightfully warm, the thermometer rising frequently above 80° during the greatest warmth of the day between the 17th and 23rd. During August the weather was delightful, and unlike many Augusts which preceded it, was a dry, warm month. In almost all the southern half of Scotland not a drop of rain fell till the last two days of the month. The temperature, however, never attained the same height as in July, thus presenting the anomaly, in Scotland, of July being the warmest month.

The mean barometric pressure, corrected and reduced to the sea level, was 29·934 inches during July, 30·018 inches during August, and 29·731 inches during September. The mean temperature of the quarter was 54°·5,—being 56°·7 in July, 54°·4 in August, and 52°·4 in September. The mean daily range of temperature amounted to 14°·7 during July, to 16°·1 in August, and to 13°·8 in September.

SCOTLAND:—MARRIAGES, BIRTHS, and DEATHS *Registered in the Quarter ended 30th September, 1864.*

1	2	3	4	5	6
DIVISIONS. (Scotland)	AREA in Statute Acres.	POPULATION, 1861. (Persons.)	Marriages.	Births.	Deaths.
		No.	No.	No.	No.
SCOTLAND.....Totals	19,639,377	3,062,294	4,993	2,7063	1,6131
I. Northern	2,261,622	130,422	83	919	542
II. North-Western	4,739,876	167,329	130	1,223	650
III. North-Eastern	2,429,594	366,783	492	3,123	1,459
IV. East Midland	2,790,492	523,822	787	4,416	2,893
V. West Midland	2,693,176	242,507	294	1,879	1,184
VI. South-Western	1,462,397	1,008,253	2,286	10,215	6,465
VII. South-Eastern	1,192,524	408,962	691	3,687	2,045
VIII. Southern	2,069,696	214,216	230	1,601	893

No. III.—IRELAND.

MARRIAGES IN THE QUARTER ENDED 30TH JUNE, 1864;
AND BIRTHS AND DEATHS IN THE QUARTER ENDED
30TH SEPTEMBER, 1864.

This return includes the number of BIRTHS and DEATHS *registered* in the 718 Registrars' districts of Ireland during the months of July, August, and September; and the number of MARRIAGES *registered* during the months of April, May, and June, 1864. These districts are co-extensive with the dispensary districts of the several Poor Law Unions.

MARRIAGES.—The number of marriages *registered* in Ireland during the three months ending the 30th of June last, amounted to 6,029, being equal to an annual rate of 1 marriage to every 240 of the population. The number returned during the previous quarter amounted to 9,578, which afforded an annual ratio of 1 in every 151 of the population. Although it is probable that many of the marriages may not have been *registered* during either period, still the great disproportion between the numbers may be readily accounted for by the fact that the greater proportion of Roman Catholic marriages take place before the Lenten season. As has been stated in the return for the preceding quarter, the districts for the registration of marriages under the Act 7 and 8 Vict., cap. 81, differed from the districts for the registration of marriages, under the Act 26 and 27 Vict., cap. 90. The Registrar-General has, with the sanction of His Excellency the Lord-Lieutenant, arranged that from the first day of July last the districts shall be coextensive.

BIRTHS.—The number of births *registered* during the quarter ending September the 30th was 33,892, representing an annual ratio of 1 in 43 of the population, according to the Census of 1861. The number returned during the first quarter of the year amounted to 30,330, or an annual ratio of 1 in 48 of the population;* and the number returned during the second quarter amounted to 38,701, or an annual birth-rate of 1 in 37.

The total number of births, therefore, *registered* in Ireland during the first three quarters of the year amounted to 102,923, yielding an annual ratio of 1 in 42 of the population, according to the Census of 1861.

DEATHS.—The number of deaths *registered* during the quarter ending the 30th of September last was 19,259, or an annual ratio of 1 death in every 75 of the population in 1861.* The number *registered* during the first quarter of the year amounted to 28,540, or an annual death-rate of 1 in 51; and the number *registered* during the quarter ending the 30th of June amounted to 24,448, or 1 in 59 per annum.

The total number of deaths *registered* during the nine months from the 1st of January to the 30th of September, 1864, amounted to 72,247, being equal to an annual ratio of 1 death in every 60 of the population in 1861.*

METEOROLOGICAL OBSERVATIONS.—The following meteorological observations, taken at the Ordnance Survey Office,† Phoenix Park, Dublin, during the months of July, August, and September, 1864, have been furnished by Captain Wilkinson, R.E., by direction of the Superintendent of the Ordnance Survey.

The mean height of the barometer for the quarter was 29·804 inches; the highest reading was 30·371 inches, which occurred on August 15th, at 9·30 A.M., the wind E.S.E.; the minimum reading (29·081 inches) was on September 16th, at 3·30 P.M., with a southerly wind blowing at the time.

The mean temperature during the three months was 57·8°; the maximum height of the mercury (81·4°) was in August, and the minimum (33·0°) was also in August. The mean of the dry bulb for the quarter was 58·8°; the mean for the month of July being 61·6°; for August 58·7°; and for September 56·2°. The rainfall during the quarter measured only 3·566 inches, being less than one-half the fall during the corresponding quarter in 1863, which was 7·591 inches. The prevailing winds during the three months were westerly and south-westerly.

During the three months the wind blew on 7 days from the north, 11 days from the north-east, 10 days from the east, 1 day from the south-east, 6 days from the south, 27 days from the south-west, 24 days from the west, and 6 days from the north-west.

July.—During this month the mean height of the barometer was 29·796 inches; the highest reading (30·097 inches) occurred on the 7th at 9·30 P.M., the wind N.W.; the lowest reading (29·304 inches) was on the 2nd at 3·30 P.M., the wind at the time blowing from the west. The mean temperature of the month was 60·6°. 80·9° to 40·5°); the 18th was the warmest day, and the 13th was the coldest. The greatest rainfall in 24 hours (·272 inch) was on the 2nd. Rain fell on 9 days. The greatest amount of ozone (7) was on the 2nd, and the least amount (1) was on the 19th and 26th; the mean ozone for the month was ·2.

August.—The mean height of the barometer during the month of August was 29·936 inches; the maximum reading (30·371 inches) was on the 15th at 9·30 A.M., the wind E.S.E.; the minimum (29·383) was on the 30th at 9·30 P.M., the wind S.W. The mean height of the thermometer was 57·1°, varying from 81·4° to 33°; the warmest day was on the 14th, and the coldest was on the 21st. The greatest rainfall in 24 hours (·314 inch) was on the 27th; it rained on 13 days. The greatest amount of ozone (9) was on the 27th; the least amount (0) was on the 11; the mean for the month was ·3.

On the 21st, the minimum temperature on the grass was 28·7° (nearly 3½ degrees of frost), and the maximum in the sun's rays was 84·2°, thus showing a range for the day of 55·5.

* According to the Census of 1861.

† Latitude 53° 21' 44"·65 north. Longitude 6° 21' 6"·35 west. Height above the sea, 158·8 feet.

September.—The mean height of the barometer during this month was 29·679 inches; the highest reading (30·240 inches) was on the 28th, at 9·30 P.M., it being at the time “calm;” the lowest reading (29·081 inches) was on the 16th, at 3·30 P.M., the wind blowing from the south. The mean temperature was 55·8°, varying from 71·2° to 37·4°; the warmest day was on the 6th, and the coldest night was on the 15th; the maximum heat in the sun (90·5°) was on the 26th, and the minimum on the grass (33·3) was on the 15. The greatest rainfall in 24 hours was ·379 of an inch; it rained on 22 days. The maximum amount of ozone was ·8; the minimum was ·2, and the mean for the month was ·4.

Meteorological Observations taken at the Ordnance Survey Office, Phoenix Park, Dublin.

1864.	Barometer.			Thermometer.			Mean of Dry Bulb.	Rain- fall.
Months.	Maximum.	Minimum.	Mean.	Maximum	Minimum.	Mean.		
	Inches.	Inches.	Inches.	°	°	°	°	Inches.
July	30·097	29·304	29·796	80·9	40·5	60·6	61·6	·964
August	30·371	29·383	29·936	81·4	33·0	57·1	58·7	1·301
September	30·240	29·081	29·679	71·2	37·4	55·8	56·2	1·301
Mean	30·236	29·256	29·804	77·8	37·0	57·8	58·8	Total. 3·566

1864.	Direction of the Wind at 9·30 A.M.							
Months.	Number of Days the Wind blew from the							
	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
July	2	7	1	—	3	6	10	2
August	4	3	7	—	2	6	6	3
September	1	1	2	1	1	15	8	1
Total	7	11	10	1	6	27	24	6

COMPARISON OF RESULTS BY DIVISIONS.—*Births.*—Comparing one division with another as to the number of births registered in proportion to their population in 1861;* the following is the result for the quarter of the year ending 30th September last:—The “Eastern” division ranks first, with an annual ratio of 1 in 39; the other divisions come in the following order:—The “North-Eastern,” 1 in 40; the “South-Western,” 1 in 42; the “Western,” 1 in 43; the “South-Eastern,” 1 in 44; the “North-Midland,” 1 in 46; the South-Midland,” 1 in 48; and the “North-Western,” 1 in 49.

Taking the number of births registered during the nine months ending 30th September last, the divisions range thus as to annual birth rate:—The “South-Western,” 1 in 37; the North-Eastern” and the “South-Eastern,” 1 in 40 each; the “Eastern,” 1 in 41; the “South-Midland,” 1 in 45; the “Western,” 1 in 46; the “North Midland,” 1 in 47; and the “North-Western,” 1 in 49.

The following statement shows the annual birth-rate and the order of the eight divisions for the quarters ending 31st March, 30th June, and 30th September, respectively, and for the three quarters taken together:—

* According to the Census.

	Quarter ending			Nine Months ending 30th September, 1864.
	31st March, 1864.	30th June, 1864.	30th September, 1864.	
I. South-Western	1 in 39	1 in 32	1 in 42	1 in 37
II. South-Eastern	„ 42	„ 36	„ 44	„ 40
III. South Midland	„ 48	„ 41	„ 48	„ 45
IV. North Eastern	„ 48	„ 34	„ 40	„ 40
V. Eastern	„ 48	„ 37	„ 39	„ 41
VI. North Midland....	„ 53	„ 42	„ 46	„ 47
VII. Western	„ 55	„ 42	„ 43	„ 46
VIII. North-Western....	„ 56	„ 45	„ 49	„ 49

Deaths.—Comparing the divisions, with regard to the number of deaths registered in each during the quarter ending 30th September last, in proportion to the population therein in 1861 ;* the following is the result :—The “ Eastern ” ranks first, with an annual ratio of 1 in 64 ; the others follow thus :—The “ South-Eastern,” 1 in 67 ; the “ North-Eastern,” 1 in 69 ; the “ South-Western,” 1 in 73 ; the “ South Midland,” 1 in 74 ; the North-Western,” 1 in 82 ; the “ North Midland,” 1 in 92 ; and the “ Western,” 1 in 100.

	Death-rate, Quarter ending			Nine Months ending 30th September, 1864.
	31st March, 1864.	30th June, 1864.	30th September, 1864.	
I. South-Eastern	1 in 43	1 in 50	1 in 67	1 in 52
II. Eastern	„ 43	„ 54	„ 64	„ 52
III. North-Eastern	„ 46	„ 52	„ 69	„ 54
IV. South Midland	„ 50	„ 60	„ 74	„ 59
V. South-Western....	„ 53	„ 60	„ 73	„ 61
VI. North-Western....	„ 56	„ 61	„ 82	„ 65
VII. North Midland....	„ 58	„ 73	„ 92	„ 72
VIII. Western	„ 67	„ 77	„ 100	„ 79

No. IV.—GREAT BRITAIN AND IRELAND.

SUMMARY of MARRIAGES, in the Quarter ended 30th June, 1864 ; and BIRTHS and DEATHS, in the Quarter ended 30th September, 1864.

COUNTRIES.	AREA in Statute Acres.	POPULATION, 1861. (Persons.)	Marriages.	Births.	Deaths.
		No.	No.	No.	No.
England and Wales	37,324,883	20,066,224	44,596	180,752	112,133
Scotland	19,639,377	3,062,294	5,710	27,063	16,131
Ireland	20,322,641	5,798,967	6,029	33,892	19,259
GREAT BRITAIN AND IRELAND	77,286,901	28,927,485	56,335	241,707	147,523

* According to the Census.

Trade of United Kingdom, 1864-63-62.—*Distribution of Exports from United Kingdom, according to the Declared Real Value of the Exports; and the Computed Real Value (Ex-duty) of Imports at Port of Entry, and therefore including Freight and Importer's Profit.*

Merchandise (<i>excluding Gold and Silver</i>), Imported from, and Exported to, the following Foreign Countries, &c. [000's omitted.]	First Six Months.					
	1864.		1863.		1862.	
	Imports from	Exports to	Imports from	Exports to	Imports from	Exports to
I.—FOREIGN COUNTRIES:	£	£	£	£	£	£
Northern Europe; viz., Russia, Sweden, Norway, Denmark & Iceland, & Heligoland } Central Europe; viz., Prussia, Germany, the Hanse Towns, Holland, and Belgium } Western Europe; viz., France, Portugal (with Azores, Madeira, &c.), and Spain (with Gibraltar and Canaries)..... } Southern Europe; viz., Italy, Austrian Empire, Greece, Ionian Islands, and Malta } Levant; viz., Turkey, with Wallachia and Moldavia, Syria and Palestine, and Egypt }	6,089,	2,317,	5,146,	1,770,	4,773,	1,673,
	13,268,	11,343,	11,544,	9,164,	10,231,	9,475,
	17,091,	7,047,	14,564,	7,589,	12,667,	7,152,
	1,715,	3,928,	1,914,	3,566,	2,121,	3,229,
	13,633,	7,026,	10,249,	4,538,	7,452,	2,787,
Northern Africa; viz., Tripoli, Tunis, Algeria, and Morocco..... }	160,	79,	197,	51,	206,	101,
Western Africa..... }	372,	242,	561,	345,	648,	474,
Eastern Africa; with African Ports on Red Sea, Aden, Arabia, Persia, Bourbon, and Kooria Moorla Islands..... }	28,	24,	26,	28,	—	51,
Indian Seas, Siam, Sumatra, Java, Philip-pines; other Islands..... }	358,	961,	843,	424,	671,	750,
South Sea Islands..... }	—	44,	19,	83,	—	—
China, including Hong Kong..... }	9,508,	2,471,	8,496,	1,858,	7,136,	1,883,
United States of America..... }	8,509,	12,027,	9,519,	7,004,	11,221,	6,450,
Mexico and Central America..... }	2,132,	823,	769,	1,058,	461,	271,
Foreign West Indies and Hayti..... }	2,582,	1,537,	2,444,	1,281,	1,865,	1,287,
South America (Northern), New Granada, Venezuela, and Ecuador..... }	872,	1,079,	370,	784,	492,	448,
„ (Pacific), Peru, Bolivia, Chili, and Patagonia..... }	2,603,	1,499,	3,086,	1,155,	2,604,	814,
„ (Atlantic) Brazil, Uruguay, and Buenos Ayres..... }	4,440,	4,029,	3,173,	2,475,	2,629,	2,530,
Whale Fisheries; Grnld., Davis' Straits, Southn. Whale Fishery, & Falkland Islands }	25,	12,	12,	6,	14,	9,
<i>Total.—Foreign Countries.....</i>	83,385,	56,488,	72,932,	43,179,	65,191,	39,384,
II.—BRITISH POSSESSIONS:						
British India, Ceylon, and Singapore..... }	22,837,	10,229,	16,461,	8,416,	10,314,	7,909,
Austral. Cols.—New South Wales and Victoria } „ „ So. Aus., W. Aus., Tasm., and N. Zea. }	2,580,	3,602,	2,285,	3,928,	2,451,	3,967,
	1,170,	1,522,	1,128,	1,510,	764,	1,159,
British North America..... }	1,251,	2,385,	923,	1,839,	1,539,	1,475,
„ W. Indies with Btsh. Guiana & Honduras }	5,306,	1,853,	3,550,	1,709,	3,318,	1,629,
Cape and Natal..... }	814,	921,	835,	662,	592,	949,
Brt. W. Co. of Af., Ascension and St. Helena }	116,	142,	57,	175,	61,	207,
Mauritius..... }	960,	338,	1,250,	215,	809,	256,
Channel Islands..... }	388,	567,	300,	381,	345,	380,
<i>Total.—British Possessions.....</i>	35,423,	21,559,	26,789,	18,835,	20,193,	17,931,
<i>General Total.....£</i>	118,807,	78,047,	99,721,	62,014,	85,384,	57,315,

IMPORTS.—(United Kingdom.)—First Eight Months (*January—August*), 1864-63-62-61-60.—*Computed Real Value (Ex-duty), at Port of Entry (and therefore including Freight and Importer's Profit), of Articles of Foreign and Colonial Merchandise Imported into the United Kingdom.*

(First Eight Months.) [000's omitted.] FOREIGN ARTICLES IMPORTED.		1864.	1863.	1862.	1861.	1860.
		£	£	£	£	£
RAW MATLS.— <i>Textile.</i>	Cotton Wool	50,504,	26,862,	11,655,	30,809,	28,941,
	Wool (Sheep's)..	10,789,	7,921,	7,333,	6,455,	7,797,
	Silk	7,434,	9,502,	9,764,	5,428,	6,243,
	Flax	3,856,	2,262,	2,664,	1,474,	2,256,
	Hemp	2,934,	1,796,	1,336,	909,	835,
	Indigo	1,777,	1,926,	2,151,	1,993,	1,893,
		77,294,	50,269,	34,903,	47,068,	47,965,
,, ,, <i>Various.</i>	Hides	1,604,	1,868,	1,681,	1,404,	2,085,
	Oils	1,849,	2,512,	2,164,	1,937,	2,259,
	Metals	2,828,	2,345,	2,807,	2,106,	2,460,
	Tallow	711,	853,	995,	1,174,	1,586,
	Timber.....	5,523,	5,669,	4,908,	5,214,	4,513,
		12,515,	13,247,	12,555,	11,835,	12,903,
,, ,, <i>Agricul.</i>	Guano	756,	2,022,	518,	1,395,	923,
	Seeds	2,138,	1,880,	1,413,	1,679,	1,850,
		2,894,	3,902,	1,931,	3,074,	2,773,
TROPICAL, & C., PRODUCE.	Tea	5,435,	6,670,	5,652,	4,219,	5,081,
	Coffee	2,254,	2,557,	2,379,	1,491,	1,428,
	Sugar & Molasses	11,336,	9,707,	8,892,	9,487,	9,005,
	Tobacco	1,390,	1,059,	673,	713,	463,
	Rice	588,	772,	1,266,	1,024,	473,
	Fruits	115,	153,	185,	354,	320,
	Wine	3,731,	2,874,	2,468,	2,829,	3,096,
	Spirits	1,544,	1,207,	1,078,	1,084,	1,420,
		26,393,	24,999,	22,593,	21,201,	21,286,
FOOD	Grain and Meal..	12,601,	17,605,	23,233,	24,693,	15,819,
	Provisions	5,753,	5,230,	5,090,	4,404,	3,693,
		18,354,	22,835,	28,323,	29,097,	19,512,
Remainder of Enumerated Articles		3,562,	2,806,	2,379,	2,312,	2,455,
TOTAL ENUMERATED IMPORTS....		141,012,	118,058,	102,684,	114,588,	106,894,
Add for UNENUMERATED IMPORTS (say)		35,253,	29,514,	25,671,	28,647,	26,723,
TOTAL IMPORTS		176,265,	147,572,	128,355,	143,235,	133,617,

EXPORTS.—(United Kingdom.)—First Nine Months (*January—September*),
1864-63-62-61-60.—*Declared Real Value, at Port of Shipment, of Articles of*
BRITISH and IRISH Produce and Manufactures Exported from United Kingdom.

(First Nine Months.) [000's omitted.] BRITISH PRODUCE, &c., EXPORTED.		1864.	1863.	1862.	1861.	1860.
		£	£	£	£	£
MANFRS.— <i>Textile.</i>	Cotton Manufactures..	35,648,	27,192,	24,769,	28,683,	30,947,
	„ Yarn	7,278,	5,463,	5,297,	7,137,	7,378,
	Woollen Manufactures	14,915,	10,973,	9,698,	8,009,	9,463,
	„ Yarn	4,214,	3,702,	2,753,	2,656,	2,893,
	Silk Manufactures ...	1,605,	1,503,	1,547,	1,593,	1,607,
	„ Yarn	199,	215,	254,	214,	205,
	Linen Manufactures...	6,123,	4,555,	3,666,	2,942,	3,466,
	„ Yarn	2,387,	1,775,	1,353,	1,127,	3,169,
		72,369,	55,378,	49,337,	52,361,	57,328,
		1,801,	1,935,	1,609,	1,462,	1,528,
„ Sewed.	Apparel	3,793,	3,131,	2,689,	2,630,	3,113,
	Haberdy. and Millnry	5,594,	5,066,	4,298,	4,092,	4,641,
METALS	Hardware	3,082,	2,669,	2,391,	2,496,	2,768,
	Machinery]	3,363,	3,031,	2,951,	2,120,	2,644,
	Iron	10,393,	9,676,	8,364,	7,909,	9,229,
	Copper and Brass	2,677,	3,072,	2,141,	1,743,	2,283,
	Lead and Tin	2,241,	2,138,	2,130,	1,359,	2,006,
	Coals and Culm	3,100,	2,768,	2,892,	2,745,	2,534,
		24,856,	23,354,	20,869,	19,372,	21,465,
Ceramic Manufcts.	Earthenware and Glass	1,620,	1,537,	1,359,	1,292,	1,595,
Indigenous Mnfrs.	Beer and Ale	1,283,	1,285,	1,124,	1,105,	1,571,
	Butter	234,	362,	262,	379,	465,
	Cheese	113,	106,	87,	95,	82,
	Candles	100,	156,	169,	215,	184,
	Salt	225,	235,	248,	297,	277,
	Spirits	447,	348,	368,	332,	230,
	Soda	686,	666,	682,	436,	753,
		3,088,	3,159,	2,940,	2,859,	3,562,
Various Manufcts.	Books, Printed	327,	323,	296,	330,	364,
	Furniture	185,	216,	183,	179,	166,
	Leather Manufactures	1,756,	1,674,	1,859,	1,545,	1,626,
	Soap	178,	193,	174,	170,	193,
	Plate and Watches ...	302,	344,	353,	331,	396,
	Stationery	253,	246,	199,	494,	572,
		3,001,	2,996,	3,064,	3,049,	3,317,
Remainder of Enumerated Articles		7,238,	6,404,	6,181,	3,309,	2,951,
Unenumerated Articles		5,638,	6,403,	5,624,	7,461,	6,865,
TOTAL EXPORTS		123,404,	104,296,	93,672,	93,795,	101,724,

SHIPPING. — FOREIGN TRADE. — (United Kingdom.) — First Nine Months
(January — September), 1864-63-62-61. — *Vessels Entered and Cleared with
Cargoes, including repeated Voyages, but excluding Government Transports.*

(First Nine Months.) ENTERED:—	1864.			1863.		1862.		1861.	
	Vessels.	Tonnage (000's omitted.)	Average Tonnage.	Vessels.	Tonnage (000's omitted.)	Vessels.	Tonnage (000's omitted.)	Vessels.	Tonnage (000's omitted.)
<i>Vessels belonging to—</i>	No.	Tons.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Russia	536	182,	340	301	91,	323	95,	307	91,
Sweden	1,008	156,	155	803	126,	714	117,	786	129,
Norway	3,017	631,	209	2,632	577,	2,360	483,	2,278	477,
Denmark	2,129	207,	97	2,305	218,	1,915	184,	1,821	176,
Prussia and Ger. Sts.	1,529	395,	258	2,992	716,	2,751	669,	2,777	637,
Holland and Belgium	1,380	193,	140	1,320	188,	1,279	177,	1,184	162,
France	1,784	143,	80	1,982	162,	1,415	118,	1,344	107,
Spain and Portugal	344	103,	299	284	87,	295	87,	354	84,
Italy & other Eupn. Sts.	608	171,	281	703	200,	611	172,	724	198,
United States	349	383,	1,097	563	566,	975	848,	1,572	1,342,
All other States	13	5,	384	11	3,	77	21,	10	3,
United Kingdm. & } Depds.....	12,697	2,569,	202	13,896	2,936,	12,715	2,973,	13,157	3,406,
	18,407	5,679,	309	17,139	5,209,	15,840	4,700,	15,491	4,681,
<i>Totals Entered</i>	31,104	8,248,	265	31,035	8,145,	28,555	7,673,	28,648	8,087,
CLEARED:—									
Russia	425	162,	381	291	86,	308	91,	304	89,
Sweden	885	134,	151	789	121,	712	116,	799	132,
Norway	1,818	318,	175	1,451	252,	1,535	262,	1,519	247,
Denmark	2,166	209,	96	2,600	247,	2,347	225,	2,377	232,
Prussia and Ger. Sts.	2,298	490,	213	4,179	829,	4,122	792,	3,832	707,
Holland and Belgium	1,385	214,	155	1,438	220,	1,743	257,	1,505	213,
France	3,333	330,	99	3,438	326,	3,768	363,	3,957	372,
Spain and Portugal	330	99,	300	290	94,	300	93,	317	84,
Italy & other Eupn. Sts.	854	256,	299	713	214,	622	80,	834	233,
United States	326	353,	1,083	515	531,	897	795,	1,225	1,071,
All other States	23	8,	348	19	6,	111	31,	20	6,
United Kingdm. & } Depds.....	13,843	2,573,	186	15,723	2,926,	16,465	3,205,	16,689	3,386,
	22,250	6,657,	298	21,707	6,083,	21,434	5,759,	20,730	5,252,
<i>Totals Cleared</i>	36,093	9,230,	256	37,430	9,009,	37,899	8,964,	37,419	8,638,

GOLD AND SILVER BULLION AND SPECIE. — IMPORTED AND EXPORTED. — (United Kingdom.) — *Computed Real Value for the First Nine Months (January—September), 1864-63-62.*

[000's omitted.]

(First Nine Months.)	1864.		1863.		1862.	
	Gold.	Silver.	Gold.	Silver.	Gold.	Silver.
Imported from:—	£	£	£	£	£	£
Australia	2,422,	—	4,540,	—	4,650,	—
So. Amca. and W. } Indies	4,183,	5,779,	3,136,	5,095,	1,226,	4,606,
United States and } Cal.	5,168,	101,	5,149,	616,	6,836,	83,
	11,773,	5,880,	12,825,	5,711,	12,712,	4,689,
France	118,	897,	185,	690,	89,	983,
Hanse Towns, Holl. } & Belg.	210,	2,062,	309,	1,211,	402,	1,735,
Prtgl., Spain, and } Gbrltr.	114,	68,	10,	66,	23,	91,
Mlta., Trky., and } Egypt	35,	1,	114,	3,	8,	13,
China	—	—	—	—	—	—
West Coast of Africa	68,	16,	47,	3,	80,	3,
All other Countries...	263,	133,	984,	118,	1,075,	69,
<i>Totals Imported</i>	12,581,	9,057,	14,474,	7,802,	14,389,	7,583,
Exported to:—						
France	5,425,	1,935,	2,293,	833,	3,900,	515,
Hanse Towns, Holl. } & Belg.	78,	635,	1,023,	703,	155,	501,
Prtgl., Spain, and } Gbrltr.	1,566,	29,	1,574,	3,	1,872,	7,
	7,069,	2,599,	4,890,	1,539,	5,927,	1,023,
Ind. and China (viâ } Egypt)	1,638,	5,188,	1,608,	6,161,	—	6,534,
Danish West Indies...	—	—	—	—	—	—
United States	183,	5,	35,	10,	36,	1,
South Africa	111,	—	—	5,	—	—
Mauritius	—	—	—	—	—	—
Brazil	916,	115,	1,234,	50,	227,	19,
All other Countries...	375,	206,	3,213,	119,	5,010,	1,024,
<i>Totals Exported</i>	10,294,	8,113,	10,980,	7,884,	11,201,	8,601,
<i>Excess of Imports</i>	2,289,	944,	3,493,	—	3,188,	—
<i>„ Exports</i>	—	—	—	82,	—	1,018,

REVENUE.—(UNITED KINGDOM.)—30TH SEPT., 1864-63-62-61.

Net Produce in YEARS and QUARTERS ended 30TH SEPT., 1864-63-62-61.

[000's omitted.]

QUARTERS, ended 30th Sept.	1864.	1863.	1864.		Corresponding Quarters.	
			Less.	More.	1862.	1861.
	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.
Customs	5,624,	5,872,	,248,	—	6,201,	5,982,
Excise	4,352,	3,922,	—	,430,	3,604,	4,221,
Stamps	2,267,	2,191,	—	76,	2,180,	2,013,
Taxes	168,	176,	8,	—	166,	160,
Post Office	1,045,	905,	—	,140,	895,	870,
Property Tax	13,456,	13,066,	,256,	,646,	13,046,	13,246,
	782,	866,	84,	—	974,	991,
Crown Lands	14,238,	13,932,	,340,	,646,	14,020,	14,237,
	69,	68,	—	1,	67,	66,
Miscellaneous	485,	411,	—	74,	513,	298,
<i>Totals</i>	14,792,	14,411,	,340,	,721,	14,600,	14,601,
			NET INCR. £380,985			

YEARS, ended 30th Sept.	1864.	1863.	1864.		Corresponding Years.	
			Less.	More.	1862.	1861.
	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.
Customs	22,573,	23,771,	1,198,	—	23,863,	23,488,
Excise	19,096,	16,992,	—	2,104,	17,430,	18,624,
Stamps	9,538,	9,146,	—	,392,	8,824,	8,426,
Taxes	3,252,	3,193,	—	59,	3,160,	3,130,
Post Office	3,960,	3,760,	—	,200,	3,560,	3,470,
Property Tax	58,419,	56,862,	1,198,	2,755,	56,837,	57,138,
	8,551,	10,605,	2,054,	—	10,532,	11,133,
Crown Lands	66,970,	67,467,	3,252,	2,755,	67,369,	68,271,
	307,	301,	—	6,	296,	292,
Miscellaneous	3,097,	2,726,	—	,371,	2,019,	1,243,
<i>Totals</i>	70,374,	70,494,	3,252,	3,132,	69,684,	69,806,
			NET DECR. £120,438			

REVENUE.—UNITED KINGDOM.—QUARTER ENDED 30TH SEPT., 1864:—

An Account showing the REVENUE and other RECEIPTS of the QUARTER ended 30th September, 1864; the APPLICATION of the same, and the Charge of the Consolidated Fund for the said Quarter; together with the Surplus or Deficiency upon such Charge.

Received:—

Surplus Balance beyond the Charge of the <i>Consolidated Fund</i> for the Quarter ended 30th June, 1864, viz.:—	£
Great Britain	—
Ireland	£797,620
	<u>797,620</u>
Income received in the Quarter ended 30th September, 1864, as shown on preceding page	14,792,489
Amount raised per Acts 25 and 26 Victoria, cap. 78, and 26 and 27 Victoria, cap. 80, on account of Fortifications, &c.	185,000
Amount received in the Quarter ended 30th September, 1864, in repayment of Advances for Public Works, &c.	527,183
	<u>£16,302,292</u>
Balance, being the Deficiency on 30th September, 1864, upon the charge of the <i>Consolidated Fund</i> in Great Britain, to meet the Dividends and other charges payable in the Quarter to 31st December, 1864, and for which Exchequer Bills (Deficiency) will be issued in that Quarter	2,695,919
	<u>£18,998,211</u>

Paid:—

Amount applied out of the Income for the Quarter ended 30th September, 1864, in Redemption of Exchequer Deficiency Bills, for the Quarter ended 30th June, 1864, viz.:—	£
Total Deficiency	£951,412
Deduct—Redeemed by Sinking Fund	588,169
	<u>363,243</u>
Amount applied out of the Income to <i>Supply Services</i> in the Quarter ended 30th September, 1864	9,918,867
Charge of the <i>Consolidated Fund</i> for the Quarter ended 30th September, 1864, viz.:—	
Interest of the Permanent Debt	£5,424,257
Terminable Debt	908,543
Principal of Exchequer Bills	234,900
Interest of " "	81,886
" Deficiency "	—
The Civil List	101,472
Other Charges on <i>Consolidated Fund</i>	484,758
Advances for Public Works, &c.	460,465
Sinking Fund	612,471
	<u>8,308,752</u>
<i>Surplus Balance</i> in Ireland beyond the Charge of the <i>Consolidated Fund</i> in Ireland for the Quarter ended 30th September, 1864	407,349
	<u>£18,998,211</u>

CORN.—*Gazette Average Prices (ENGLAND AND WALES), Third Quarter of 1864.*

[This Table is communicated by H. F. JADIS, Esq., Comptroller of Corn Returns.]

Weeks ended on a Saturday 1864.			Weekly Average. (Per Impl. Quarter.)											
			Wheat.		Barley.		Oats.		Rye.		Beans.		Peas.	
			s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.
July	2	.....	40	9	27	2	20	9	31	2	36	2	34	—
„	9	.....	41	9	27	8	21	10	28	9	36	1	32	8
„	16	.....	42	6	27	10	21	7	31	5	36	11	34	3
„	23	.....	43	—	27	3	21	—	34	—	37	8	35	7
„	30	.....	44	—	27	7	22	4	30	2	38	4	35	11
Average for July			42	4	27	6	21	6	31	1	37	—	34	6
August	6	.....	44	1	28	3	22	10	33	—	39	2	35	3
„	13	.....	43	6	28	1	22	—	32	9	39	8	36	9
„	20	.....	42	7	28	7	22	11	31	6	40	9	35	5
„	27	.....	42	5	29	1	22	—	32	8	41	1	35	6
Average for August			43	1	28	6	22	5	32	6	40	2	35	9
September	3	.....	42	3	31	1	22	5	34	1	40	9	35	9
„	10	.....	42	4	32	1	21	9	34	7	41	10	36	11
„	17	.....	42	—	32	—	20	11	35	6	41	2	36	5
„	24	.....	40	11	31	5	20	11	34	7	40	7	37	1
Average for September ..			41	10	31	8	21	6	34	8	41	1	36	6
Average for the Quarter ..			42	3	29	2	21	8	32	9	39	4	35	7

RAILWAYS.—PRICES, *July—Sept.;—and* TRAFFIC, *Jan.—Sept., 1864.*

Total Capital Ex- pended Mlns.	Railway.	For the (£100). Price on			Miles Open.		Total Traffic first 39 Weeks. (000's omitted.)		Traffic pr. Mile pr. Wk. 39 Weeks.		Dividends per Cent. for Half Years.					
		1st Sept.	1st Aug.	1st July.	'64.	'63.	'64.	'63.	'64.	'63.	30 Jun. '64.	31 Dec. '63.	30 Jun. '63.			
£					No.	No.	£	£	£	£	s.	d.	s.	d.	s.	d.
51,0	Lond. & N. Westn.	112 ³ / ₄	117 ¹ / ₂	114 ¹ / ₄	1,271	1,232	4,110,	3,681,	90	86	57	6	60	—	42	6
45,0	Great Western ...	69	70 ¹ / ₄	67 ¹ / ₂	1,222	1,169	2,561,	2,389,	61	57	30	—	30	—	20	—
16,3	„ Northern....	131	140	135	387	351	1,269,	1,121,	93	91	55	—	87	6	42	6
21,7	„ Eastern ...	47 ¹ / ₂	49	48	663	663	1,219,	1,130,	51	49	12	6	25	~	12	6
12,2	Brighton	103	108	104	267	261	761,	745,	83	80	50	—	50	—	50	—
17,2	South-Eastern ...	85 ¹ / ₄	93 ¹ / ₂	93	308	306	927,	886,	86	83	42	6	58	4	45	—
14,9	„ Western ...	96 ¹ / ₂	99 ¹ / ₂	98	463	454	913,	870,	59	53	45	—	55	—	45	—
178,3		92 ¹ / ₈	96 ³ / ₄	96 ¹ / ₄	4,581	4,436	11,760,	10,822,	75	71	41	9	52	3	36	9
23,8	Midland.....	132	139	133	641	641	1,782,	1,609,	75	70	70	—	70	—	57	6
20,1	Lancsh. and York.	116	121 ¹ / ₂	116 ¹ / ₄	403	395	1,545,	1,358,	103	93	57	6	47	6	42	6
13,0	Sheffield and Man.	66	67 ¹ / ₂	60	242	242	676,	601,	75	68	27	6	15	—	—	—
31,4	North-Eastern ...	106 ¹ / ₂	112	106 ¹ / ₂	1,095	1,095	2,303,	2,058,	59	52	55	—	55	—	42	6
88,3		105 ¹ / ₈	110	103 ¹ / ₈	2,381	2,373	6,306,	5,626,	78	71	52	6	46	10	47	6
10,2	Caledonian	125 ¹ / ₂	125 ¹ / ₂	119 ¹ / ₂	262	244	733,	656,	77	73	65	—	62	6	52	6
5,6	Gt. S. & Wn. Irln.	92	92	92	387	354	331,	321,	25	27	45	—	45	—	42	6
822,4	Gen. aver.	98 ⁵ / ₈	102 ⁵ / ₈	99	7,611	7,407	19,130,	17,425,	72	68	47	1	50	10	41	3

Consols.—Money Prices, 1st Sept., 88¹/₂ to ⁵/₈ de., and 88⁵/₈ to ³/₄ ac.—1st Aug., 89¹/₈ to 90 de.—
1st July, 90¹/₈ to ¹/₄ de., and 90¹/₄ to ³/₈ for 8th July.
Exchequer Bills.—1st Sept., 25s. to 15s. dis.—1st Aug., March, 10s. to 6s. dis.; June 7s. to 2s. dis.

BANK OF ENGLAND.—WEEKLY RETURN.

Pursuant to the Act 7th and 8th Victoria, c. 32 (1844), for Wednesday in each Week, during the THIRD QUARTER (July—Sept.) of 1864.

[0,000's omitted.]

ISSUE DEPARTMENT.					COLLATERAL COLUMNS.	
1	2	3	4	5	6	7
Liabilities.	DATES.	Assets.			Notes in Hands of Public. (Col. 1 minus col. 16.)	Minimum Rates of Discount at Bank of England.
		Government Debt.	Other Securities.	Gold Coin and Bullion.		
Notes Issued.	(Wednesdays.)					
£	1864.	£	£	£	£	1864. Per ann.
Mlns.		Mlns.	Mlns.	Mlns.	Mlns.	16 June 6 p. ct.
27,90	July 6	11,01	3,63	13,25	21,38	
27,65	„ 13	11,01	3,63	13,00	21,57	
27,11	„ 20	11,01	3,63	12,46	21,70	
26,95	„ 27 ...	11,01	3,63	12,30	21,63	25 July 7 „
26,82	Aug. 3	11,01	3,63	12,17	21,93	
26,57	„ 10	11,01	3,63	11,92	21,35	5 Aug. 8 „
26,59	„ 17	11,01	3,63	11,93	21,02	
26,73	„ 24	11,01	3,63	12,08	20,51	
26,88	„ 31	11,01	3,63	12,23	20,74	
26,88	Sept. 7	11,01	3,63	12,23	20,81	
26,81	„ 14	11,01	3,63	12,16	20,42	9 Sep. 9 „
27,07	„ 21	11,01	3,63	12,42	20,34	
27,04	„ 28	11,01	3,63	12,39	20,24	

BANKING DEPARTMENT.

8	9	10	11	12	13	14	15	16	17	18
Liabilities.					DATES. (Wdnsdys.)	Assets.				Totals of Liabil- ties and Assets.
Capital and Rest.		Deposits.		Seven Day and other Bills.		Securities.		Reserve.		
Capital.	Rest.	Public.	Private.			Government.	Other.	Notes.	Gold and Silver Coin.	
£	£	£	£	£		£	£	£	£	£
Mlns.	Mlns.	Mlns.	Mlns.	Mlns.	1864.	Mlns.	Mlns.	Mlns.	Mlns.	Mlns.
14,55	3,67	9,49	13,47	,51	July 6	11,12	23,07	6,52	,68	41,39
14,55	3,41	4,68	15,08	,59	„ 13	11,17	20,37	6,08	,70	38,32
14,55	3,47	4,46	13,41	,61	„ 20	11,09	19,28	5,41	,71	36,50
14,55	3,50	4,96	13,72	,52	„ 27	11,07	20,18	5,32	,69	37,26
14,55	3,62	5,15	13,52	,56	Aug. 3	11,05	20,76	4,89	,70	37,41
14,55	3,65	4,96	14,42	,53	„ 10	11,10	21,11	5,22	,68	38,11
14,55	3,67	5,14	13,95	,53	„ 17	10,89	20,60	5,57	,78	37,84
14,55	3,64	5,23	13,71	,54	„ 24	10,80	19,97	6,22	,74	37,73
14,55	3,86	5,81	13,07	,55	„ 31	10,80	20,16	6,14	,75	37,85
14,55	3,88	6,02	12,90	,56	Sept. 7	10,80	20,31	6,07	,74	37,91
14,55	3,90	6,70	12,72	,54	„ 14	10,80	20,49	6,39	,75	38,42
14,55	3,92	6,81	12,39	,50	„ 21	10,80	19,90	6,73	,75	38,18
14,55	3,99	7,08	12,59	,51	„ 28	10,80	20,40	6,80	,73	38,73

CIRCULATION.—COUNTRY BANKS.

Average Amount of Promissory Notes in Circulation in ENGLAND and WALES on Saturday, in each Week during the THIRD QUARTER (July—Sept.) of 1864; and in SCOTLAND and IRELAND, at the Three Dates, as under.

ENGLAND AND WALES.				SCOTLAND.				IRELAND.		
DATES.	Private Banks. (Fixed Issues, 4,25.)	Joint Stock Banks. (Fixed Issues, 3,27.)	TOTAL. (Fixed Issues, 7,52.)	Four Weeks, ended	£5 and upwards.	Under £5.	TOTAL. (Fixed Issues, 2,75).	£5 and upwards.	Under £5.	TOTAL. (Fixed Issues, 6,35.)
1864.	£ Mlns.	£ Mlns.	£ Mlns.	1864.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.
July 2	3,10	2,87	5,97	July 23	1,55	2,70	4,25	2,76	2,58	5,34
„ 9	3,15	2,92	6,07							
„ 16	3,11	2,91	6,02							
„ 23	3,07	2,88	5,95							
„ 30	3,05	2,85	5,89							
Aug. 6	3,04	2,82	5,86	Aug. 20	1,52	2,67	4,19	2,63	2,57	5,20
„ 13	3,02	2,82	5,83							
„ 20	2,97	2,79	5,76							
„ 27	2,95	2,78	5,73							
Sept. 3	2,96	2,78	5,75	Sept. 17	1,46	2,71	4,17	2,66	2,66	5,32
„ 10	2,98	2,79	5,77							
„ 17	2,99	2,79	5,78							

FOREIGN EXCHANGES.—Quotations as under, LONDON on Paris, Hamburg & Calcutta; —and New York, Calcutta, Hong Kong & Sydney, on LONDON—with collateral cols.

1	2	3	4	5	6	7	8	9	10	11	12	13	14
DATES.	Paris.				Hamburg.			New York.	Calcutta.		Hong Kong.	Sydney.	Standard Silver in bars in London. pr. oz.
	London on Paris.	Bullion as arbitrated.		Prem. or Dis. on Gold per mille.	London on Hambg.	Bullion as arbitrated.			India Council.	At Calcutta on London.			
		Agnt. Engd.	For Engd.			Agnt. Engd.	For Engd.						
3 m. d.				3 m. d.			60 d. s.	60 d. s.	6 m. d.	6 m. s.	30 d. s.		
1864.		pr. ct.	pr. ct.			pr. ct.	pr. ct.	pr. ct.	d.	d.	d.	pr. ct.	d.
July 2 ..	25.65	.2	—	2½ p	13.9	—	.3	234	23⅝*	24⅞	57¾	par. 1 pm	61⅛
„ 16 ..	„	.1	—	„	8¾	—	„	260	„ *	—	—	—	„
Aug. 13 ..	.75	—	.2	„	10½	—	—	280	„ ¾*	24¾	57½	par. 1 pm	61
„ 20 ..	.70	—	.3	„	9¾	—	—	„	„ ⅞*	„	„	„	„ ¼
Sept. 3 ..	.67½	—	.2	„	9½	—	—	„	24⅛*	25¼	„	„	„ ⅝
„ 17 ..	.80	—	.3	3½ p	10	—	.5	273	24*	„ ¾	„	„	„ ⅞

Note.—The figures marked (*) are for banker's drafts.

INDEX TO VOL. XXVII,

YEAR 1864.

	PAGE
ABERDEEN, statistics of (see <i>Valentine</i>)	357
criminal statistics of, for twenty years 1843-63	413-21
AGRICULTURAL POPULATION of England and Wales, decrease of, 1851-61 (see <i>Purdy</i>)	388
see <i>Population</i> .	
AGRICULTURAL STATISTICS. Example of Mr. Caird's method of taking "typical districts"	276
— want of in England	466
see <i>Population</i> (Agricultural).	
AMERICA (CENTRAL BRITISH). Commercial Progress and Resources of (see <i>Hind</i>)	82
ditto, history of, to 1858	82-6
ARMIES. Comparison of the organization and cost in detail of the English and French (see <i>Sykes</i>)	1
<i>table</i> of effective strength of English and French	3
administration, staffs, &c., of ditto	7-8
comparative <i>tables</i> of ditto	26-69
European, comparative statistics	128
ARMY (BRITISH). Returns of sickness-rates for 1863	434
in India, "report on the sanitary state of," reference to its contents	579
ARTILLERY, excess of in English army	4
AUSTRALIA, statistics of crime in (see <i>Westgarth</i>)	505
area and population of the seven colonies of Australasia	505
inequality of the sexes in	518
BAINES (Mr. E.). Extracts from his speech on the diffusion of cheap literature in England	410
BANK OF ENGLAND. weekly account of the issue and banking departments:	
Fourth quarter, 1863 . 163 | Second quarter, 1864 . 457	
First ,, 1864 . 300 | Third ,, . 630	
bank rate of discount, 1844-64	275
BANKS (COUNTRY), amounts of promissory notes in circulation (in Great Britain):	
Fourth quarter, 1863 . 164 | Second quarter, 1864 . 458	
First ,, 1864 . 301 | Third ,, . 631	
BRAZIL, resources of (see <i>Heywood</i>)	245
principal events in its history since 1500	245
ministers, electors, deputies, &c.	245-6
population, races, &c.	247
slave trade, &c.	248-51
productions, exports, revenue, &c.	251-7

	PAGE
BRITISH ASSOCIATION, thirty-fourth meeting, at Bath, September, 1864 (Section F), Economic Science and Statistics—Papers read	580-81
Section F, address of the President (see <i>Farr</i>)	459
BROWN (Samuel). <i>On the Rates of Mortality and Marriage amongst Europeans in India</i>	566
Summary of conclusions arrived at in a previous paper on the mortality, &c., of officers in India	566-7
Mortality of married less than of bachelor officers, late period of marriages, and difference of age between husbands and wives	566-7
The most precise information to be gained from provident fund records	568
List of reports which are the most important sources for original facts	568-9
Bengal civilians, percentage rates of mortality of	569-73
— marriage-rate	573-5
Bombay civilians, mortality-rate	575
Madras civilians, mortality-rate	576
General conclusions; diminution in mortality of late years, especially in favour of married life, &c.	578
— high rates of marriage compared with peerage of Britain, the military service, &c.	578
Reference to the contents and recommendations of the "Reports on the Sanitary State of the Army in India"	579
BULLION AND SPECIE, gold and silver, imported and exported :	
Jan.—Dec., 1861-63 155 | Jan.—June, 1862-64 453	
Jan.—March, 1862-64 296 | Jan.—Sept., „ 626	
CAIRD (Mr.). Method of taking typical districts for agricultural statistics	276
CALCUTTA, 6,000 bodies burnt, and as many thrown into the river annually, and consequent noxious gases emitted there	355
CANADA. Population of, 1666-1738	85
emigrant route across the continent from, its favourable character	94-8
CAPITAL. <i>Annual Accumulations of, in the United Kingdom.</i> [From the "Economist"]	118
Enumeration of objects among which surplus income of this country is distributed	118
Schedules under which income tax is assessed, and tables showing increase in each, 1854-60 and 1843-53	119-22
Supposed amount of annual accumulations 130 millions sterling	121
Collateral evidences from poor and county rate assessments	123
Ditto, from expenditure on houses and railways	124-5
Ditto, from duty on fire insurance	126
CAVALRY, excess of in French army	5
CENSUS. Comparative cost of those for 1841, 1851, and 1861	274
CHADWICK (Edwin). Statistics of educational results	261
CHADWICK (Edwin). <i>Poor Law Administration, its Chief Principles and their Results in England and Ireland as compared with Scotland</i>	492
Principles of a compulsory poor law	492
— the evidence collected by the Poor Law Commission, in 1833, not inimical to the continuance of a poor law, but to its mal-administration	492
— necessary that the condition of the pauper should not be better than the independent labourer, and that the relief should be entire, not partial	493
Principles of in-door relief; the workhouse available for all cases	494
Condition of populations without compulsory relief for destitution	494
Uses of a poor law system as adjunct to a police system	494
— its application to the suppression of brigandage in Spain and Italy	495
Introduction of a poor law system into Ireland	495
— substitution of entire for partial relief of the able-bodied, &c.	496
Partial or out-door relief the exception in Scotland	496
Defects of poor law administration in England	496
— indirect application of out-door relief in place of wages by employers who were also guardians	497
— benefits of initiating extensive public works for the able-bodied	498
— abuses prevented by entire or in-door relief	498
Proposed classification of pauper children and others in separate establishments, and evils from its non-adoption	499
Concurrent action of police originally intended	500

	PAGE
CHADWICK (Edwin). <i>Poor Law Administration—contd.</i>	
Superior economy of paid and responsible administration, as exemplified in the new poor law organization and that of a proposed general police force .	500-501
Greater expense of the Scotch system of out-door relief, without poor-houses	502
Advantages of in-door relief as displayed in Ireland	503
Preventives of pauperism, sanitary and educational, not intended	503
CHILDREN, why healthy as infants, and unhealthy when past infancy in London	198-9
CHOLERA, mortality of, in 1849 in Salisbury	541
CIDER, analysis of, showing its small nutritive power	527
CIDER MANUFACTURE, quiet and unobtrusive character of	526
CIDER-TRUCK system in the West of England (see <i>Spender</i>)	526
COMMERCE of France, exports and imports, 1861-63	129-31
CORN, average weekly prices (with monthly and quarterly averages):	
Fourth quarter, 1863 162 | Second quarter, 1864 456	
First ,, 1864 299 | Third ,, 629	
COTTON, imports of, 1861-63	132
exports from Calcutta, Madras, and Bombay, 1862-64	270
COTTON FAMINE, cost of, in relief to the poor	596
CRIME, statistics of, in Russia (see <i>Michell</i>)	369
statistics of, in Australia (see <i>Westgarth</i>)	505
in Australia as compared with England	506-8
increase of, in Australia from the gold fields	508-9
proportioned to destitution in England and Wales, 1843-63	519
CRIMINAL STATISTICS of Aberdeen for twenty years, 1843-63	413-21
CRIMINALS, proportion of to population, in Scotland in 1863, and daily number in prison	421
DEATH-RATE, non-improvement of, by our national sanitary measures	175-6
comparison of own with foreign countries, not much to our advantage	177
excessively low in Scotch insular districts	178
arguments in favour of using the male death-rate only in calculation	179
forms of calculation for finding	211-13
of children, comparative	181-4
ditto, comparison of female education with	185-6
ditto, in towns, &c.	194-8
see <i>Mortality</i> .	
DEBT (NATIONAL), of Brazil	256-7
DECIMAL SYSTEM, arguments in favour of	467-8
DISCOUNT, bank rate of, from 1844 to 1864	274-6
DISEASE in the army, return of sickness rates, 1863	434
among flocks in middle ages as high as 25 per cent.	74
DRUNKENNESS, excess of in Russia, from national custom of deep drinking on occasions of solemnity or merriment	373
DURHAM UNIVERSITY. Opening and extension of academical endowments in (see <i>Heywood</i>)	106
EDUCATION. <i>Statistics of Educational Results</i> , by Edwin Chadwick, C.B.	261
Difficulties in the way of obtaining information of the subsequent career of the children	261-2
Necessity and results of house to house visitation, for information	262
Evidence of the Rev. G. Fisher as to good effects of a higher standard of education at the Greenwich Hospital School	263
Ditto, the Royal Military Asylum, Chelsea	265
notice of the increase of, in England, from 1818 to 1861 (from 1 in 17 to 1 in 6)	410
of prisoners, committed in the county of Aberdeen	420

EDUCATION—*contd.*

(comparative) in 1862. Signatures of names at marriages: number in various towns	584-5
(MILITARY), cost of	19-21

ENGLAND, number, occupation, and status of foreigners in (see *Levi*) . 558

EURASIANS (Indo-European Christians of colour), on the mortality of
(see *Tait*) 324

EUROPEANS in India, rates of mortality and marriage amongst (see
Brown) 566

EXCHANGES (FOREIGN), quotations on London:

Oct.-Dec., 1863	164	April-June, 1864	458
Jan.-March, 1864	301	July-Sept., „	631

EXPORTS, United Kingdom:

Jan.-Dec., 1859-63	153	Jan.-June, 1860-64	451
Jan.-March, 1860-64	294	Jan.-Sept., „	624

FARR (William). *Address as President of Section F (Economic
Science and Statistics) of the British Association, at Bath,
September, 1864* 459

Analysis of the province and divisions of statistical science	459-60
Extract from Sir G. C. Lewis's work on politics, on the value of a Govern- mental registration of social and political facts	461
Notice of Quetelet's work on comparative statistics	461
Progress of Governmental statistics in Spain, Italy and Russia	462-3
The stated population of Russia, British India and China quite conjectural still	463
Decline of the population of the Sandwich Islands	464
Notice of Strang's statistics of Glasgow	464
Origin of the Carlisle life table and its subsequent usefulness	464-5
Notice of Mr. Norman and M. Guerry as private statisticians	465
Enumeration of statistical reports, &c., now published by the Government offices	465
Want of agricultural statistics in England	466
Arguments in favour of decimal coinage and weights	467-8
Fallacies arising from non-attention to double or compound units in calculations	468-9
Usefulness of the hectar as the final land unit	470
Mechanical force of a country deduced from a unit of labour, its value, &c.	471
Prediction of the future by the calculus of probabilities, and its connection with politics	471
Progress of free trade accelerated by statistics in different countries	472
Assistance of statistics to sanitary reform	473
Survey of the states of the world, their populations and power, as illustrating the connection of statistics with politics	473-4
Great increase in number of possible combinations of powers as the number of states increases	475
Growing feeling in Europe against the existence of small states	475
The physical condition of slaves in the Southern States shown to be good from their rapid increase, and the equitable abolition of slavery a question of time	476
Notice of Malthus and his law of increase of population by geometrical progression	477
Notice of celebrated statisticians deceased during the year	478

FINANCE (French), admirable clearness and exactness of accounts in . 65-7

FIRES, excessive number of, in Russia, and supposed causes 369-70

FOOD, low prices of, in fifteenth century 70

FOREIGNERS, number, occupation, and status of in England (see *Levi*) . 558

causes of the attractiveness of France and America to 559

in England, their disabilities confined to exclusion from Privy
Council and Parliament 564

FRANCE. Statistics of the commerce of, value of principal articles
imported and exported, 1861-63 129-31

excellent system of financial accounts in 65-7

notice of publications on the French military budget. 68-9

see *Armies*.

FREE TRADE, its progress accelerated by statistics 472

	PAGE
GAIRDNER (Dr.), discussion on his propositions on the mortality of infants; shown to be unfounded	204-7
GEOGRAPHY, hypothetic character of that of the United States	99
GOLD FIELDS of Winnipeg and Saskatchewan	91-3
GREENWICH HOSPITAL School, statistics of the results of education at	263-4
HEALTH, state of the public :	
Quarter Dec., 1863 141	Quarter June, 1864 439
,, March, 1864 281	,, Sept., ,, 607
ditto, Scotland :	
Quarter Dec., 1863 149	Quarter June, 1864 447
,, March, 1864 289	,, Sept., ,, 616
HERBERT (Robert). <i>Statistics of Live Stock in the United Kingdom, 1853-63</i>	520
Rise in the price of meat in the last twenty years and its causes	520, 22
Number of beasts and sheep imported, and amount of home production in 1853 and 1863, showing no increase in the latter	521
Quarters from which London derives its supplies, and their probable amount	522-3
Failure of the large supplies to London from Pembrokeshire and Romney Marsh during the last twenty years	523
Early maturity of stock from crossing of breeds	524
Difficulties in England in the way of increasing the amount of stock	524
Changes in breeds, crosses, &c., which have taken place of late years	525
Conclusion that prices will continue high	525
HEYWOOD (James). <i>On the Opening and Extension of Durham University Academical Endowments</i>	106
The Act of 1832, Royal Charter of 1837, transference of estate for support of the University, amount of income, &c.	106-7
Recommendations and ordinances of the commissioners of 1861 disallowed by the Privy Council	107-8
Decrease in number of students from 1850 to 1863	109
Proposed alteration and reform	110-11
HEYWOOD (James). <i>Resources of Brazil</i>	245
Summary of principal events in its history, since 1500	245
Statement of the property qualifications, &c., of the electors, deputies and senators	245-6
Ministers, titles of nobility, &c.	246
Number and distribution of the population, intermixture of races, &c.	247
Progress of the Brazilian slave trade since the treaty of 1826	248
Internal slave trade from the north of Brazil to Rio de Janeiro	248-9
Unproductiveness of the national estates under slave labour	249
Prices of slaves in Brazil in 1862	250
Question of the practical slavery of the free Africans under the care of the Brazilian Government	251
Imports and exports, high import duties since 1844, &c.	251-2
Vessels and tonnage of the foreign and coasting trades	252-3
Productions, value of exports, prices of food, &c.	253-4
Revenue and expenditure, estimates of the expenditure, of the several ministries, &c.	254-5
National debt, its items, and guaranteed interest on railways	256-7
HIND (Henry Youle). <i>On the Commercial Progress and Resources of Central British America; the Lake Winnipeg and Saskatchewan Districts</i>	82
History of Central British America to 1858	82-6
— proceedings of the French from 1646 to 1763	82-4
— population of Canada, 1666-1738	85
— summary of important events since formation of North-West Company in 1783	86
Action of the United States' Government, Minnesota, Hudson's Bay Company, &c., up to 1863	86-8
Agricultural capabilities of the Red River and Saskatchewan districts	88-90
— number of acres, compared with the extent of Canada, showing excess of cultivable land in basin of Lake Winnipeg	89
Mineral wealth	90
— salt springs, iron ores, great lignite coal formation	90-91
Winnipeg and Saskatchewan gold fields	91-3
Communication with Central British America, practicable routes	93

HIND (Henry Youle). *On Central British America—contd.*

Canadian emigrant's route across the continent	94
— continuous stretch of 1600 miles of country of a most favourable character for passage of emigrants	95
Comparison between British and United States' routes across the continent	96
— comparatively desert character of one-third of the United States to the west of the 100th degree of longitude	96 (note)
— superior fertility and peculiar advantages of the Sasaktchewan Valley in Central British America	97
— comparative altitudes of the passes of the Rocky Mountains, in the United States and British territory, and favourable physical conformation of the latter	98 (and note)
— hypothetic character of United States geography and cartology, and its disastrous consequences	99
— poor vegetation of the plains of the Mississippi valley	99
Communication between Canada and Central British America	100
— no insuperable objection to ditto from physical features, as supposed	100
Communication <i>via</i> Hudson's Bay	100
— Lake Winnipeg within a week's journey of the ocean	101
No other area for extensive settlement in British America besides this district	101
Progress of Minnesota, and its large contribution to the Federal army	102
Dakotah and Nebraska, their soil against their assuming much importance	103
Indian population, their small numbers and probably tractable character	103
Available agricultural land in British America twice the entire area of the United Kingdom, with a population of only four millions	103-4
Summary of the advantages and importance of the district	104-5

HODGE (William Barwick). *On Shipwrecks in the Royal Navy* 234

The facts of the paper from James' Naval History, and Gilly on Shipwrecks of the Royal Navy	234
Analysis of Tables I and II	234
Annual percentage of loss, 1793-1815	235
Loss of men in the Royal and Mercantile Navies, as 28½ and 26¾ per cent. of the crews of wrecked vessels	235
Proportion of crews lost in different classes of vessels	236
Proportion of vessels lost in each quarter of the year	237
Vessels lost, 1815-57, great decrease compared with former period	237
Loss of men much the same proportion as in former period	238
The diminution of losses partly ascribable to Sir R. Seppings's system of diagonal bracing	238
Principle of lengthening the bow in vessels, and superior sailing qualities secured by it	238 (note)
Serious loss of vessels from corrosion from coppering the iron-bolted vessels captured from the French	239
Table I. Number of cruisers in the Navy, 1793-1815	240
— II. Number of ships of the Navy accidentally lost, 1793-1815	242
— III. Number of vessels of the Navy lost, 1816-57	244

HOSPITALS. *Statistics of Metropolitan and Provincial General Hospitals for 1862* 401

Tables. General results, and medical and surgical cases	402-3
— average number of patients and mean residence, rate of mortality	404
— admissions and deaths in general and special wards	405
— death-rate in St. George's Hospital, 1827-62	405
— the same series of tables for county hospitals	406-9

HOUSE DUTY (INHABITED), in 1855 and 1860, showing increase 124

IMPORTS, United Kingdom :

Jan.-Nov., 1859-63	152	Jan.-May, 1860-64	450
Jan.-Dec., „	292		
Jan.-Feb., 1860-64	293	Jan.-Aug., „	623

INCOME, surplus, of this country, enumeration of objects among which distributed 118

INCOME TAX, schedules under which assessed, and tables showing increase in each, 1854-60 and 1843-53 119-22

INDIA. Why India is in the state it is (statistics illustrative of its present financial condition and prosperity) 268

abstract of revenues and charges of India for 1861-65	272
relative number of Eurasians in	325
history of Portuguese, Dutch, and French settlements in	325-7

	PAGE
INDIA— <i>contd.</i>	
rates of mortality and marriage amongst Europeans in (see <i>Brown</i>)	566
on the mortality of Eurasians [Indo-European Christians of colour] (see <i>Tait</i>)	324
INSURANCE (FIRE) duty on, 1843-62, showing annual increase	126
JEULA (Henry). <i>A Few Statistics relating to Shipping Casualties [in the Mercantile Navy], 1856-62</i>	222
Vessels and tonnage of British shipping in 1863	222
Average annual total of losses, and monthly, quarterly, &c., averages for all parts of the world	223-4
Ditto, ditto, for the coasts of the United Kingdom	225-6
Averages of the cargoes of the vessels lost on our coasts	226-7
Average percentage of losses on different parts of the coast	227-8
Ditto, of description, sizes and ages of vessels	228-30
Average of partial and total losses, and rates of casualty per voyage	230-31
Value of property lost upon our coasts	231
Question as to the relation between the increase in casualties, and the percentage decrease in number of men employed to the tonnage	232
Decrease in average number of lives lost in the casualties	232-3
LAND, the produce of, two and a-half times less in the middle ages than now	74-5
enormous comparative rise in price of, since then	77
rise in value of agricultural, since repeal of corn laws	388
LEVI (Leone). <i>On the Number, Occupation, and Status of Foreigners in England</i>	558
Rapidly increasing intimacy of the European nations	558
Proportion of foreigners to native-born subjects in England, much less than in France and America, but more than in Spain	558-9
Causes of the attractiveness of France and the American States to foreigners	559
Influence of the English abroad greater than of foreigners in England, from their being of a higher class	560
Comparative nationalities of foreigners in England, France and the American States	560-61
Foreigners in England chiefly residing in London, and their proportions compared with Paris and New York	561
Enumeration of the employment of foreigners in this country	562
Average number of foreigners among our criminals	563
Benefits to a country of a free admission of the foreign industrial element	563
Injudicious enactments against, and ill-treatment of, foreigners in this country in former times	563-4
Disabilities of foreigners now confined to exclusion from the Privy Council and Parliament	564
Instruction to be gained from the study of the peculiar idiosyncrasies of each nation	565
LEWIS (Sir G. C.), extract from, on Governmental registration of facts	461
LIFE TABLES (CARLISLE), origin of, and subsequent usefulness	464-5
LITERATURE (CHEAP), diffusion of in England (extracts from Mr. E. Baines's speech)	410
LIVE STOCK, statistics of, in the United Kingdom, 1853-63 (see <i>Herbert</i>)	520
quarters from which supplies reach London, and their partial failure	522-3
early maturity of, from crossing of breeds, changes in breeds, &c.	524-5
LONDON, mortality of compared with Paris (see <i>Tite</i>)	479
LUMLEY (William Golden). <i>The Statistics of the Roman Catholics in England and Wales</i>	303
Statement of Cardinal Wiseman, as to the great increase of Roman Catholicism in England since 1826	303
Number of priests to churches, and limited nature of the institutions called convents (schoolmistress' house)	304
Comparative accommodation for worshippers in Church of England, Protestant Dissenters' and Roman Catholic churches, in 1851	305
Comparative numbers of clergymen, Protestant ministers and Roman Catholic priests	305
Comparative increase of Roman Catholic chapels not greater than those of Nonconformists, 1838-61	306-7

LUMLEY (William Golden). *Roman Catholics in England—contd.*

Localities of the Roman Catholic churches and chapels in 1851 and 1861 . . .	307-8
Marriages registered in England, and ratio of Roman Catholics to totals . . .	309
The increase to 1851, $2\frac{1}{2}$ per cent., but to 1861 only $\frac{1}{2}$ per cent. . .	310
The larger increase accounted for by great immigration of Irish and foreigners . . .	310-11
Comparative numbers of Church of England, Roman Catholic and other paupers, and distribution of the Roman Catholics . . .	311-12
Number of new schools of Church of England, Roman Catholics, &c., and number of latter in each county . . .	313-15
Ratio of Roman Catholic convict prisoners, 1862-64 . . .	316-20
The Roman Catholics one-twentieth of population and one-fifth of prisoners in gaols . . .	320
Distribution of foreigners and Irish in groups of counties . . .	321
Statement of Roman Catholics and members of Established Church in Ireland, showing that the supposed increase of the Roman Catholic Church in England is only from a shifting of its members . . .	321-2
Proportion of Roman Catholics and their chaplains in the army . . .	322

MALTHUS, notice of his law of increase of population by geometrical progression . . . 477

MANCHESTER and Salford, statistics of Sunday schools in . . . 421

MARRIAGE, rates of, amongst Europeans in India (see *Brown*) . . . 566
see *Registration*.

METEOROLOGICAL TABLES :

Dec. quarter, 1863 . . . 147	June quarter, 1864 . . . 445
March „ 1864 . . . 287	Sept. „ . . . 613

METEOROLOGY of England and Wales, remarks on the weather by James Glaisher :

Dec. quarter, 1863 . . . 145	June quarter, 1864 . . . 443
March „ 1864 . . . 285	Sept. „ . . . 611

METEOROLOGY and weather, Scotland :

Dec. quarter, 1863 . . . 149	June quarter, 1864 . . . 447
March „ 1864 . . . 289	Sept. „ . . . 617

METEOROLOGY and weather, Ireland :

September quarter, 1864 . . . 619

MICHELL (T.). *Statistics of Crime in Russia* . . . 369

Crimes and accidents . . .	369-71
— excess in number of fires, and the supposed causes . . .	369-70
— premature deaths caused by crime or accident, 59 per diem, with analysis of causes . . .	370-71
Consumption of spirits; successful financial result of the abolishment of the brandy-farm system . . .	372
— excess of drunkenness in Russia, from national custom of deep drinking on all occasions of solemnity or merriment . . .	373
Table of crimes and accidents in Russia during January-April, 1863 . . .	374-77

MIDDLETON (A. B.). *The Sanitary Statistics of Salisbury; the Years 1841-49 and 1856-64 compared* . . . 533

Local peculiarities : geographical position, area, population, &c. . .	533-4
— the Close, the Avon and other rivers, character of subsoil, &c. . .	534
— canals or water-courses in the streets, their abuse as sewers, Act against their use by butchers, temp. Henry VII, &c. . .	535-6
Past sanitary state, notice of its insalubrity by old Burton . . .	537
— visitations of plague, in 1579, 1604, 1627, and 1666; excellent conduct of John Ivis, mayor in 1627 . . .	537-40
— high rate of mortality . . .	540
— badness of the water used, and consequent diarrhoea, &c. . .	540-41
— mortality of the cholera in 1849 . . .	541
Works for drainage and water supply : disgusting character of the canals at night, and heaps of filth . . .	541-2
— Sir J. Harington's "Metamorphosis of Ajax" (a jakes) . . .	542
— contamination of the wells, saturation of the subsoil by the canals, &c. . .	542-3
— remedial drainage works adopted, and obliteration of the canals . . .	543-4
— waterworks: reservoirs, daily quantity raised, cost, quality of the water, &c. . .	544-5
Present condition of the city: great improvements following the drainage system . . .	546

	PAGE
MIDDLETON (A. B.). <i>Statistics of Salisbury—contd.</i>	
Present condition: decrease in mortality since ditto (from 27 to 14 in the 1,000)	547-8
— diseases and causes of death before and since drainage	549-50
— deaths of children, ditto	550-51
— formation of a museum of articles from the sewers	552
Question as to the effects of sanitary reform in prevention of epidemics and reduction of mortality	553
Objections to the theory that poverty, and not atmospheric stench, is the true cause of disease	554
Rivers not injuriously polluted by the sewage from small towns	555
Ditto, shown by that of Salisbury into the Avon	555-6
Benefits of sanitary reform in its hygienic effects	556
MILITARY ASYLUM (ROYAL), statistics of the effects of education at	261
MINNESOTA, its progress, and large contributions to the Federal army	102
MORTALITY of England and Wales, annual rate per cent.:	
All quarters, 1861-63 . . . 142 | All quarters, 1862-64 . . . 439	
,, 1862-64 . . . 282 | ,, ,, . . . 608	
of London and Paris, comparative (see <i>Tite</i>)	479
rates of, amongst Europeans in India (see <i>Brown</i>)	566
excessive in India, of non-commissioned officers and men, compared with commissioned officers	353-4
of Eurasians [Christians of colour of mixed European and Asiatic parentage] (see <i>Tait</i>)	324
ditto, less than that of other Christians in India	339
OF CHILDREN, much higher in Liverpool than in London	201
ditto, relative, of Birmingham, Plymouth, &c.	201
see <i>Death-rate</i> .	
NEW SOUTH WALES, census of for 1861, statistics of	267
NEWSPAPERS, comparative circulation of, in 1831 and 1864	411
PARIS, defective hygienic conditions and over-crowding of houses in	485-6
defective drainage, and retention of cesspools under houses in	487-8
table of its ordinary and extraordinary receipts	386
on the street improvements of, and their cost (see <i>Tite</i>)	378
improvements, tables of their cost	380-83
ditto, expensive character of, and why	384-5
mortality of, compared with London (see <i>Tite</i>)	479
PAY of English and French soldiers	6, 9
PERIODICALS (LITERARY), published in London, statistics of in 1864	412
PLAGUE, visitations of, at Salisbury	537-40
PLAY-PLACES, open-air, necessity for, shown by death statistics of children	199-200
POOR, cost of the cotton famine in relief to the (from the "Manchester Guardian")	596
POOR AND COUNTY RATES, net annual value of property assessed to, 1840-56	123
POOR LAW ADMINISTRATION, its principles and results in England and Ireland, as compared with Scotland (see <i>Chadwick</i>)	492
POOR LAW, principles of a compulsory one	492
as an adjunct to a police system	494
introduction of into Ireland	495
defects of its administration in England	496-8
in Scotland, partial or out-door relief the exception	496
ditto, greater expense of, without poor-houses	502
in Ireland, advantages of in-door relief as displayed in	503
POPULATION. Comparative cost of the English census in 1841, 1851, and 1861	274
of England and Wales in fifteenth century, 1½ to 2 millions	76
of Canada, 1666-1738	85
of Russia, India, and China, number still conjectural only	463

POPULATION—*cont.*

(AGRICULTURAL), of England and Wales, decrease of, 1851-61	
(see <i>Purdy</i>)	388
ditto, of Lancashire and Lincolnshire, comparison of . . .	395-7
PRICE OF MEAT, rise in the price of, in the last twenty years, and its causes . . .	520, 22
PRICES of provisions; average of consols, wheat, meat, &c., 1863-64 . . .	{ 141, 281
	438, 607
of wheat, on a continuous one from 1380 to 1484 (see <i>Rogers</i>) . . .	70
of edibles and potables in 1506 (see <i>Sykes</i>) . . .	258
PURDY (Frederick). <i>On the Decrease of the Agricultural Population of England and Wales, 1851-61</i> . . .	388
Rise in value of agricultural land since repeal of corn laws . . .	388
Non-increase of population, only in some of the agricultural districts . . .	388
Division of counties into most, medium, and lowest, agricultural . . .	389
Comparative increase of population in ditto, since 1831 . . .	390
Number of adults engaged in agriculture, showing decrease or increase in each division . . .	391
Ratio of adults engaged in agriculture, to total adult population, 1851-61, proportion in each division, &c. . .	392-3
Various tables of decrease and increase in particular divisions and counties . . .	394-5
Comparison of Lancashire and Lincolnshire as to agricultural population, &c. . .	395-7
— agricultural population of Lincolnshire six-sevenths, and its number of farms only two-thirds that of Lancashire, but its assessed income nearly twice as great . . .	396-7
Appendix: <i>tables</i> of adults, and of persons at all ages engaged in agriculture, 1851-61 . . .	398-400

QUETELET'S work on comparative statistics, notice of . . .	461
--	-----

RAILWAYS, prices and traffic:

Oct.-Dec., 1863 . . . 162	Jan.-June, 1864 . . . 456
Jan.-March, 1864 . . . 299	Jan.-Sept., „ . . . 629
in United Kingdom, total capital, 1847-61 . . .	125
REGISTRATION of marriages, births, and deaths:	
Quar. Sept.-Dec., 1863 . . . 137, 144	Quar. March-June, 1864 . . . 435, 442
„ Dec.-Mar., 1863-64 . . . 277, 284	„ June-Sept., „ . . . 603, 610
1858-64, annual rate per cent.	{ 139, 279
	437, 605
ditto, Scotland:	
Quarter Dec., 1863 . . . 148	Quarter June, 1864 . . . 446
„ March, 1864 . . . 288	„ Sept., „ . . . 614
ditto, Ireland:	
June-September, 1864	618
Registrar-General's reports. On certain results and defects of (see <i>Sargant</i>)	170
— ditto, changes wanted in	207-11
RELIGIOUS SECTS. <i>Census of, in Victoria</i>	266
No objections there among the Nonconformists to accurate statistics of religions	266
Relative numbers of each sect; rapid increase of the Roman Catholics . . .	267
Census of New South Wales	267

REVENUE, net produce of, applications, &c., in year and quarters ending:

Dec., 1860-63 . . . 160-61	June, 1861-64 . . . 454-5
March, 1861-64 . . . 297-8	Sept., „ . . . 627-8

ROGERS (Rev. J. E. T.). <i>On a Continuous Price of Wheat for 105 Years, from 1380 to 1484</i>	70
--	----

The period before the Reformation not one of social barbarism, as by some supposed	70
The prices in this paper from the farming accounts of Heyford Warren, Oxon	70

	PAGE
ROGERS (Rev. J. E. T.). <i>On a Continuous Price of Wheat—contd.</i>	
Low price of food during the period	71
Value of the coinage, and the prices of common labour during the same	72
Wheat the habitual food of the labourer in the middle ages, oats being used principally for cattle	73
Rarity of rye, and difficulty of obtaining evidence of its price	73
Price of labour 25 per cent. higher in London than in the country	73
Disease among flocks in middle ages, as high as 25 per cent.	74
Evidence of great agricultural economy among our forefathers, but the produce of land 2½ times less than the modern yield	74-5
Cattle and sheep poor and small in those times	76
Population of England and Wales in the fifteenth century 1½ to 2 millions	76
Formula for judging the relative cost of land to price of labour, profit, &c.	76
Enormous comparative rise in the price of land since those times	77
Gradual commutation of labour tenures for payment of money rents	77-
Rise of the class of small freeholders	78
The mass of the community little affected by the wars of the Roses	79
Weight of silver in the shilling in the fifteenth century	79
Table, prices of wheat, 1380-1484, &c.	80
— price of wool, 1376-1432	81
ROMAN CATHOLICS, statistics of, in England and Wales (see <i>Lumley</i>)	303
increase of in England, accounted for by immigration of Irish and foreigners	310-11
in England, one-twentieth of the population, and one-fifth of the prisoners in gaols	320
RUSSIA. The Russian budget for 1864 (article on, from the "Economist")	426-34
statistics of crime in (see <i>Michell</i>)	369
excess of drunkenness in	373
RYE, rarity of its culture in England	73
SALISBURY, sanitary statistics of, 1841-49 and 1856-64 (see <i>Middleton</i>)	533
local peculiarities of	533-6
works for drainage and water supply, and previous character of the canals, &c.	541-5
present condition of the city, comparative mortality, &c.	546-52
SANITARY MEASURES (National), non-improvement of our death-rate by	175-6
SANITARY REFORM, prevention of epidemics and other hygiènic effects of	553-6
SANITARY STATISTICS of Salisbury, 1841-49 and 1856-64 (see <i>Middleton</i>)	533
SARGANT (William Lucas). <i>On Certain Results and Defects of the Reports of the Registrar-General</i>	170
Summary of principal conclusions arrived at	170
Cases in which the objects proposed by registration have been attained	171
Explanation of Table A	172-186
— recapitulation	186
— of Table B	187-202
— recapitulation	202
— of Table C	204-7
Errors of numbers from the adoption of poor law districts	172
Density of population to acres, an imperfect test of over-crowding	173
Necessity of taking ages into account in comparing the deaths in different places, especially as to number of infant deaths	173-4
Non-improvement of the death-rate by our sanitary measures, drainage, and other national efforts for purification	175-6
Superior longevity of the country over town, more due to work in the open air than to country air	177
Comparison of our death-rate with that of foreign countries, not much to our advantage	177
The lower Scotch longer-lived than the English, except in the towns.	177-8
Excessively low rate of the Scotch insular districts (14.6 per 1,000)	178
Excess of females in places where persons of independent means congregate (34 to 73 per cent.)	179
Arguments from the "disturbing element" of domestic servants, in favour of using the male death-rate only in calculations of mortality	179
Variations of male death-rate in different counties	179-80
Inaccurate assertions as to excessive death-rate of young children: the causes of the erroneous calculations explained	181
Comparative death-rates of children in different counties	182-4

	PAGE
SARGANT (William Lucas). <i>On Certain Results and Defects of the Reports of the Registrar-General—contd.</i>	
Question as to the little effect of high or low wages on the mortality of farm labourers	184-5
Comparison of female education with infantile death-rates in different places	185-6
Summary of the above, pp. 172-86	186
Deficiencies in the Registrar-General's Reports, from the treatment of towns too much as elements only of counties	187-8
Consequent differences between his population numbers and those of the census, with examples	188-9
Case of Birmingham, as illustrating the difficulty of finding the true death-rates when districts are given in place of towns, &c.	189-91
Number of persons to the acre, in each of our largest towns	192
Number of persons in a house in various towns	192
Improvement of death-rates in the decennial periods, 1841-60	192
Male death-rate and excess of females over males in towns	193
Comparative death-rate of children in towns, and errors in excess from miscalculations	194-8
Explanation of the author's mode of calculation to correct these errors	194-7
Explanation why infants are healthy, and children past infancy unhealthy, in London	198-99
Statistics of deaths of children in Bethnal Green and the City, showing the chief want to be open-air play places	199-200
Child mortality in Liverpool much higher than in London	201
Relative child mortality of Birmingham, Plymouth, &c.	201
Summary of the above, pp. 187-202	202
Dr. Gairdner's propositions, "that unhealthy places are more fatal to infants than adults;" "that agricultural counties are fatal to infants," and "that the west-end of London has an unduly high death-rate of infants," discussed and shown to be unfounded	204-7
Changes wanted in the Registrar-General's Reports: prefatory instructions for inquirers, fuller index, state of education in towns, &c.	207-8
— need of a decennial volume as epitome of results after each census	208
— various points in which instructions are wanted	210-11
Forms of calculation for finding death-rates	211-13
Appendix of tables: A, vital statistics of each county in 1841-50 and 1851-60	214-17
— B, vital statistics of principal cities and towns, 1841-50 and 1851-60	216-19
— C, vital statistics of the metropolis	220-21
SCHOOLS, SUNDAY, in Manchester and Salford, statistics of	421
SEXES, inequality of, in the Australian colonies	518
SHIPPING (British), vessels and tonnage in 1862	222
foreign trade, United Kingdom:	
Jan.-Dec., 1860-63	154
Jan.-June, 1861-64	452
Jan.-March, 1861-64	295
Jan.-Sept., „	625
superior sailing qualities of, from lengthening their bow	238(<i>note</i>)
SHIPPING CASUALTIES in mercantile navy, a few statistics relating to (see <i>Jeula</i>)	222
reported in Lloyd's Register (with summary): Oct. - Dec., 1854-59	156-9
SHIPWRECKS in the Royal Navy (see <i>Hodge</i>)	234
ditto, tables	240-44
diminution of, partly ascribable to Sir R. Sepping's system of diagonal bracing	238
SILVER, weight of, in the shilling in the fifteenth century	79
SLAVE TRADE of Brazil	248-51
SLAVERY in the Southern States, its equitable abolition a question of time	476
SLAVES in the Southern States, their physical condition shown to be good from their rapid increase	476
prices of, in Brazil, in 1862	250
SOLDIERS, comparative cost of each (two French at a little more than one English)	2
SPENDER (Edward). <i>On the "Cider-Truck" System in some parts of the West of England</i>	526
Quiet and unobtrusive character of the cider manufacture	526
The labourers paid from 20 to 50 per cent. of their wages in cider	526, 529
Comparative analysis of cider, showing its small nutritive power	527

	PAGE
SPENDER (Edward). <i>On the "Cider-Truck" System—contd.</i>	
Noxious character of the cider given to the labourers	527
Excessive quantities drunk at harvest time, and their deleterious effects	528
Improvident results of the excess of wages received in cider	529-30
The system acquiesced in by the older labourers, and other difficulties in reforming its evils	530-31
Advantages of the commutation of cider into money payments	531-2
STATISTICAL ABSTRACTS, international, with corresponding details, utility of	114
STATISTICAL CONGRESS (INTERNATIONAL). <i>Reports of the Official Delegates from England at the Meeting at Berlin, September, 1863</i> (continued from vol. xxvi, p. 419)	112
Mr. Valpy's report: list of the publications of the statistical department of the Board of Trade, and analyses of their contents	112-15
Utility of international statistical abstracts, with corresponding details	114
Prejudice against agricultural statistics, and its probable removal	110
STATISTICAL SCIENCE, analysis of its province and divisions	459-60
STATISTICAL SOCIETY :	
anniversary meeting and report (thirtieth), 1863-64	165
list of papers read	165
abstract of receipts and payments	169
proceedings, ordinary meetings, first to eighth, 1863-64	582-3
STRANG'S statistics of Glasgow, notice of	464
STREET IMPROVEMENTS of Paris, and their cost (see <i>Tite</i>)	378
STREETS, a loss of 60 per cent. usually incurred in the making of new ones in a city	378
STRIKES in the manufacturing districts, history of [from the "Manchester Guardian and City Press"]	587
the Staffordshire strike, 1864, its causes, effects, and pecuniary sacrifice	587-90
the Leeds and Low Moor lock-out; pecuniary cost	590
strike at the Durham collieries, 1863-64	593
SYKES (Colonel W. H.). <i>Comparison of the Organization and Cost in Detail of the English and French Armies</i>	1
Introductory, as to the comparative cost of each soldier (two French at little more than one English)	2
Table of effective strength of each army	3
Excess of artillery in the English, and cavalry in the French, army	4-5
Details of the composition and numbers of French and English regiments, &c.	4 (note)
Total charge of each army and calculation of pay and cost per head	6-7
Administration of the army, comparative cost	7
French etats-majors and English general staff	8
Pay of infantry, cavalry, artillery, engineers, &c.	9-10
Army hospital corps and medical establishment	10
Commissariat officers, provisions and forage	11
Rations and clothing	12-13
Cost of barracks; martial law	14-15
Manufacturing department; small arms and gunpowder	16-17
Remount, gun factories	18
Cost of military Education	19-21
Miscellaneous charges, recruiting dotation, &c.,	21-25
Appendix of tables :	
— I to XVII, French army	26-55
— XVIII, comparative, of number of officers and men in the two armies, and respective cost	56-61
— XIX, comparative, of French and English military pay	62-3
— XX, statement of method of applying grants of public money in France, and system of auditing public accounts	64-9
Minute and searching control in France over details of expenditure	64
Admirable clearness and exactness of French financial accounts, and checks on improper estimates, &c.	65
System of additional votes of money	65
Jealousy and watchfulness of the Cours des Comptes to prevent over-expenditure	66
Difference of the English and French systems, that the essential point in the latter is the incurring of liability, in the former the paying away of monies	66-7
Examination of measures, &c., by the Conseil d'Etat, before their submittal to the Legislature	67
Notice of various publications on the French military budget	68-9

	PAGE
SYKES (Colonel W. H.). <i>Price of Edibles and Potables in A.D. 1506.</i>	258
"Bill of fare for fifty people of the Company of Salters, 1506," with analyses and comparison of the prices with those of modern times	258-9
— see <i>Valentine</i> (statistics of Aberdeen).	
TAIT (P. M.). <i>On the Mortality of Eurasians</i>	324
Previous papers chiefly on European mortality in India	324
Calculation of relative number of Eurasians in India	325
Historical Statement of the Portuguese, Dutch and French settlements in India, and colonies of other nations	325-7
Explanation of the term "Eurasians," as Christians of colour in India, of mixed European and Asiatic parentage	328
The term East Indian applied to all Christians of colour affecting the dress of Europeans	328
Prejudices against them now passing away	329
Records of the Uncovenanted Service Family Pension Fund; abstracts showing rate of mortality in, &c.	330-42
Remarkable results of ditto, showing the rate of mortality to be less among Eurasians than other Christians in India	339
Tables of decrements, mixed class and Eurasians	343-50
Mortality per cent. per annum amongst various classes	351-3
Marked improvement in mortality of European military officers in India, as shown by Mr. S. Brown's "Madras Military Fund Report"	353-4
Great contrast in excessive mortality of non-commissioned officers and men, shown by the "Sanitary Commission"	354
Careful registry of deaths of the native population of Calcutta by the police 6,000 bodies burnt, and as many thrown into the river annually in Calcutta, and consequent foul effluvia and noxious gases emitted	355
TITE (William, M.P.). <i>On the Paris Street Improvements and their Cost</i>	378
A loss of 60 per cent. usually incurred in the making new streets in the heart of a city	378
Enumeration and progress of the remarkable Paris improvements, and their supposed cost	378-9
Enormous liabilities incurred by the city of Paris	380
Tables of cost and returns in the operations of the Halles Centrales, Rue de Rivoli, and Boulevard Sebastopol, showing the amount of the losses (about 50 per cent. on gross outlay)	380-83
Objectionable height of the side streets, above the surface of the new Boulevards Malesherbes and Sebastopol	383-4
Expensive character of the new streets, partly from the replacing of densely crowded parts by open spaces	384
Ditto, because the operation is really that of converting inhabited house-rent into ground-rent only	385
Table of the ordinary and extraordinary receipts of the city of Paris	386
Compromising character on the city's credit of a continuance of these improvement operations	387
TITE (William, M.P.). <i>On the Comparative Mortality of London and Paris</i>	479
Uncertainty as to the rates of mortality in Paris from the forms in which drawn up, and from the interference and delays of different officers	479-80
— ditto, from the changes of the limits of the city, the returns of the Census of 1861, &c.	480-81
The period 1853-62 selected as most free from the disturbing causes, revolutionary, &c. of previous periods	481-2
Summary of the superior hygienic conditions of Paris over those of London	482
Average rate per cent. of deaths, in Paris 2.78 and London 2.39	483
Greater resort of people from the <i>banlieue</i> of Paris to the hospitals, balanced by the number of Paris children sent to die elsewhere	484
Greater crowding in the houses of Paris, a cause of excess of mortality	485, 490
Hygienic conditions of Paris houses very defective, with bad smells, &c.	485-6
The division of property in France, one cause of crowding in town districts	486 (note)
Defective drainage and retention of cesspools under houses in Paris	487-8
Causes of the insufficiency of the water supply, and want of high service	488
Absurdly small size of the vessels used for purposes of cleanliness	489
Decreased mortality in Paris since the recent improvements	489
Changes in the forms of fatal diseases since ditto	490
General conclusions, agreeing with those of M. Legoyt	491
TRADE of United Kingdom, exports and imports, 1861-64	{ 151, 291
see <i>Exports, Imports.</i>	{ 449, 622

TRADE—*contd.*

of United Kingdom, 1861-63, general account of, and analysis of details (from the "Daily News")	132
of France, see <i>France</i> .	
TRANSPORTATION, opposition to, in the Australian colonies	517-18
TROOPS, see <i>Army</i> .	

UNITED STATES, comparatively desert character of one-third of, to the west of the 100th degree of longitude	96(<i>note</i>)
UNITS (COMPOUND), in calculations, fallacies from non-attention to	468-9

VALENTINE (James). <i>Statistics of the City of Aberdeen</i> (communicated by Colonel Sykes, M.P., President)	357
---	-----

Births,—illegitimate births and marriages, 1857-63	357-8
Deaths—ages and causes of deaths	359
Numbers signing by marks; public health	360
Lunacy, pauperism, and industrial schools	361
Crime; prison commitments	362
Provident institutions, savings banks, penny banks, &c.	363
Public baths	364
Custom-house, trade, customs, and shipping	364-5
Post office, letters, money orders, &c.	366-7
Cattle trade	367-8

VALPY (Richard). Report at the International Statistical Congress at Berlin, 1863	112-15
---	--------

VESSELS, see *Shipping*.

VICTORIA, census of religious sects in	266
VITAL STATISTICS, <i>tables</i> of: counties, cities, and towns, 1841-60	214-19
ditto, metropolis	220-21

WAGES, rise of, in India, since commencement of railways there	270
of labour, 25 per cent. higher in London than in country in fifteenth century	73
little effect of high or low, on mortality of farm labourers	184-5

WARS OF THE ROSES, the mass of the community little affected by	79
---	----

WATERLOO BRIDGE, traffic statistics of, number of foot passengers, and total receipts, 1818-63	127-8
--	-------

WESTGARTH (William). <i>The Statistics of Crime in Australia</i>	505
--	-----

Area and population of the seven colonies of Australasia	505
Local circumstances affecting crime	506
— agricultural character of South Australia, and effects of gold discoveries in the other colonies	506
Crime in Australia as compared with England	506
— transportation the cause of the average of crime being greater in Australia	506
Crime and climate	507
— smallest ratio of crime in Queensland, and highest (except West Australia) in Tasmania and New South Wales	507
Crime in Australia greater than in England	507
— cost of police and prisons, seven times as much, and ratio of commitments nearly twice as great	507-8
Large ratio in Victoria, the causes, its position between New South Wales and Van Dieman's Land, and the influx of the convict population to the gold fields	508
Increase of crime in New Zealand from the Otago gold fields	509
Retrospect of the several colonies; their improving condition with the cessation of the convict system	510-12
Case of West Australia; comparative number of the convicts and the free class; excess of the former	512-14
— calculation of number of offences, showing nearly every second man to be a yearly offender against society	515-16
Appendix A. Opposition to transportation and defensive legislation of the colonies	517-18
— B. Inequality of the sexes in the Australian colonies	518
— C. Crime proportioned to destitution in England and Wales, 1843-63	519

	PAGE
WHEAT, on a continuous price of, from 1380 to 1484 (see <i>Rogers</i>) .	70
<i>table</i> of ditto	80
the habitual food of the labourer in the middle ages	73
WINNIPEG (Lake) District, North America, commercial progress of (see <i>Hind</i>)	82
extent of cultivable land in	89
WISEMAN (Cardinal), his statement of the great increase (?) of Roman Catholicism in England since 1826	303
WOOL, <i>table</i> of prices of, 1376-1432	81



